Fortune

AUG 25 1930

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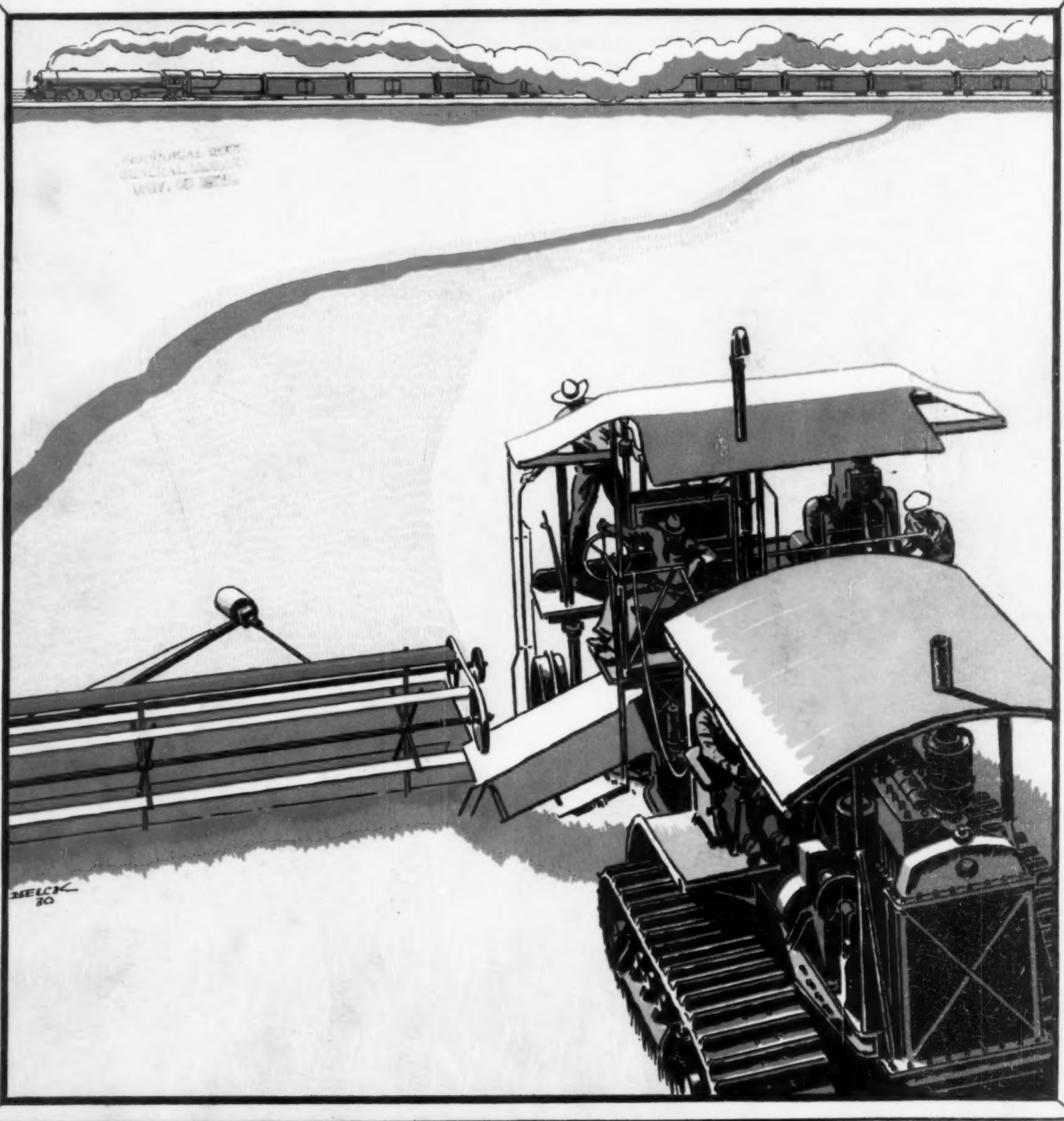

DAYLIGHT—
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IT'S the dreamer who leads big business. Here's an idea to inspire executives to dream of cutting costs.

Let's assume that your business produces a product that requires a finish for protection or decoration. Time is consumed while that finish dries. The product occupies space while drying. Time and space cost money. Nitrocellulose lacquer dries more quickly than other finishing materials—reduces the time and space required for finishing.

Nitrocellulose lacquer imparts a tough film, highly resistant to chipping or scratching. It comes in a wide variety of beautiful shades, or in a clear form that is invisible when applied. It is waterproof, and can be cleaned easily with soap and water. Solutions of nitrocellulose make excellent adhesives, and stiffeners for fabrics. They are easily applied to wood, metal, glass, pottery, plaster, textiles, floor and wall coverings, and to many other surfaces.

To stimulate further your dream of increased profits we have prepared a booklet "The Story Of Modern Lacquer," which we will gladly send to you. Nitrocellulose lacquers are sold by paint, varnish, and lacquer manufacturers, who maintain research departments which will cooperate to make your dream come true Write for our booklet and consult the manufacturer who supplies your finishing materials.

The Hercules Powder Company does not manufacture lacquer, celluloid, or other pyroxylin products. We produce nitrocellulose from which these materials are made.

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HERCULES POWDER COMPANY
(INCORPORATED)
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NITROCELLULOSE . . . COTTON CELLULOSE . . . NAVAL STORES . . . EXPLOSIVES

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In summer, you step into an atmosphere that is cooled and dehumidified. In winter it's warm, clean and healthfully humidified. The name of this year-round comfort is Manufactured Weather.

THE next time you're near the Chrysler Building, walk down to the Terminal barber shop for a few minutes.

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You'll find this same year-round comfort in other places in the Chrysler Building: Shaw-Walker's spacious display room on the third floor. The basement coupon and vault departments of the Central Hanover Bank and Trust Company. The shops in the basement arcade. And provisions have been made so that Manufactured Weather can be installed at any level of the whole Chrysler Building.

Manufactured Weather is the name given exclusively to the conditions of air comfort produced by the systems of the Carrier Engineering Corporation.

ONE ITEM THAT NEVER GOES ON YOUR BILL. It's Manufactured Weather, and it gives year-round comfort to the customers of this Terminal Shop in the Chrysler Building. (below) YOU'LL ENJOY VISITING this Shaw-Walker display room in the Chrysler Building . . . equipped with Manufactured Weather.

There are three reasons why you should find out right away what Manufactured Weather can do for you. First, its pleasant effect on your personal comfort and productive efforts and those of your employees. Second, the goodwill it builds among your present customers and the new ones it will attract. Third, its investment value in protecting any building from obsolescence. A request to our Newark office will bring you full information.

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Manufactured Weather *makes* "Every day a *good* day"

A Stock Exchange Buys Comfort

In the San Francisco Stock Exchange, where hurrying feet travel miles over the floor during the day, a floor had to be chosen that would provide comfort to the feet and to the ears; a floor whose natural resilience would be comfortable to walk upon and at the same time reduce the clatter of foot traffic. It must not originate dust to be inhaled or to settle into valuable mechanical equipment. Although comfort is a prime consideration in a stock exchange or bank floor, durability, appearance and maintenance are equally important factors which must be weighed. A consideration of these points by the authorities resulted in the installation of over 14,000 square feet of Stedman Reinforced Rubber Tile in this building. Would you like a copy of the catalog which describes this material in detail? • • • • • • • •

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Fortune,
September, 1930

FORTUNE is published monthly by TIME, Inc., at 205 East 42nd Street, New York, N. Y. Entered as second class matter January 7, 1930, at the Post Office at New York, N. Y., under the act of March 3, 1879. Subscription rates: One year in the U. S. and possessions, $10; Canada, $10.50; elsewhere, $11.

Vol. 2
No. 3

SAN FRANCISCO CENTERS THE AREA OF AMERICA'S GREATEST GROWTH

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Adolph Zukor	New City, N. Y.
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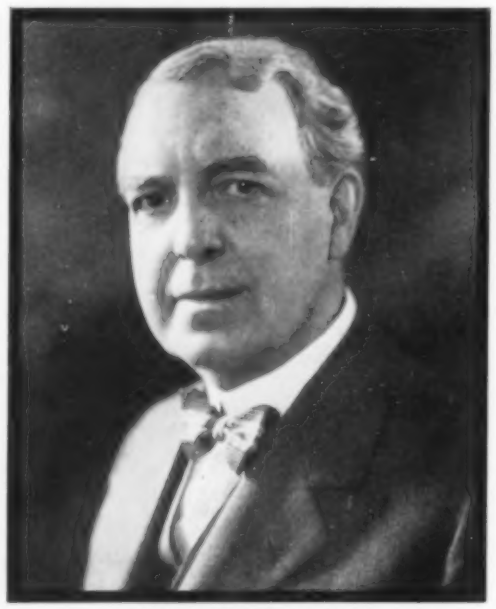
Off the Record

Shorthand Note

JOHN ROBERT GREGG likes to make speeches. This is fortunate, because in recent years more than one banquet has been given in his honor. Notably, there was the Silver Jubilee Convention of the Gregg Shorthand Association held in Chicago in 1913, when Mr. Gregg's hair was both redder and thicker than it is today. And there was the fortieth birthday of Gregg Shorthand, celebrated with great conviviality in 1928 and subsequently shadowed by the death of Mrs. Gregg from pleurisy which she contracted while in Liverpool, birthplace of the Gregg system and scene of the convocation. During the birthday festivities both King George and the system were toasted, and Mr. Gregg was presented with an elaborate casket of precious metals, shaped, like Gregg shorthand itself, on the basis of an ellipse. There have been numerous other tributes paid to the inventor of the world's most widely employed shorthand system. Last June he was awarded the degree of D.C.S. (Doctor of Commercial Science) by Boston University. An idea of Gregg dominance may be secured from the fact that out of some 7,124 U. S. cities and towns whose high schools teach shorthand, more than 7,000 use the Gregg system. The Gregg Publishing Company of New York is the largest producer of commercial textbooks and business courses in the world and has just acquired 15,000 square feet of office space where, amid Jacobean surroundings, arrangements are being made to serve tea daily. The three Gregg magazines—the *Gregg Writer*, the *American Shorthand Teacher*, *El Taquigrafo Gregg*—have a combined circulation of more than 100,000 copies.

Anyone who imagines that Mr. Gregg has made his success in a freak or a mushroom calling has got quite the wrong impression of this thing called shorthand. Ever since groups of Roman scribes jotted down the remarks of the local Stentors (one scribe writing the first sentence while another took the second and so on), the study of rapid notation has been developed and ramified until today it has a truly academic aspect with a long and varied history and about as many grounds for disputation as Chaucerian scholarship. Among the great names are Dr. Timothy Bright, who dedicated his system to his contemporary, Queen Elizabeth; John Willis, who in 1602 published the first alphabetic system; Thomas Gurney, who modified the system of one William Mason in 1750 and whose descendants still use the Gurney method in their work as official reporters of the Houses of Parliament. Three very famous and divergent systems were offered by the German, Franz Xavier Gabelsberger, in 1834; the Englishman, Isaac Pitman, three years later; and the French priest, Emile Duployé, in 1868.

John Robert Gregg was born sixty-three years ago in northern Ireland. A friend of his father's named Annesley appeared during John Robert's boyhood and astonished the entire parish by taking down the local preacher's Sunday sermon in shorthand. He also astonished the preacher, who had plagiarized some of his most pious observations. Mr. Annesley's feat convinced Gregg Sr. that



JOHN ROBERT GREGG

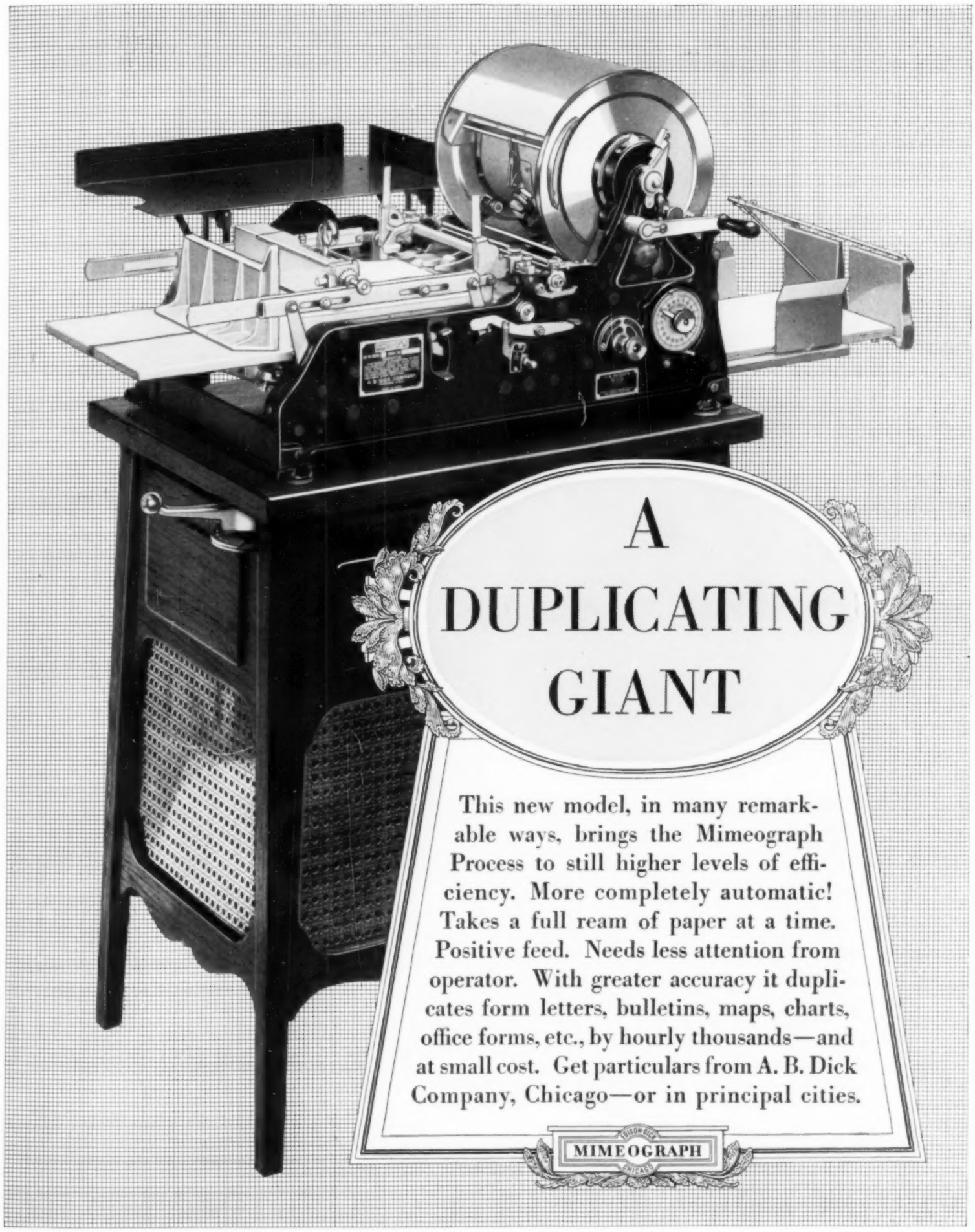
all five of his children should learn shorthand. This delighted John Robert, who was not very good in his other subjects but who won gold medals in this one and, while still a boy, carried on learned correspondence with some of the foremost shorthand experts of Europe. The more he studied shorthand—and he learned many systems—the more he became convinced that a new method was needed. It would involve a synthesis of several of the most attractive qualities of its forerunners. Like Taylor and Gabelsberger, unlike Pitman, it would require only one grade of line, no shading. Also unlike Pitman, it would require no position writing (the significance of the characters depending on their position above or below a line, etc.). Like Gabelsberger, it would have the natural slant of longhand, and like the Duployan system, it would use connective vowels. While working in a Glasgow lawyer's office, young Gregg devised a system called Script Phonography which approached this synthesis, but still used shading and position writing. He was later bilked out of his rights to this hasty invention, a bitter experience which prompted him to go on. To the shorthand convictions aforementioned, he added another—the most frequent combinations of letters should be symbolized by those combinations of lines which were most natural to the hand. In 1888, while he was teaching shorthand in Liverpool, he borrowed $50 from one of his brothers and published 500 copies of a pamphlet entitled *Light-Line Phonography—One Slope! One Position! ! One Thickness! ! !* In his preface the twenty-one-year-old author announced that "in presenting his work to the public he asks for nothing beyond an impartial investigation, and with perfect confidence awaits the result." The bravado of this utterance has been justified, for Light-Line Phonography is the Gregg shorthand of today. There were newspaper controversies to help its inventor to repute, and hard work in the U. S., whither he soon removed, where he took a wife, and where he has stayed.

With a genial face and a sharp eye, he is still very busy, dresses meticulously (usually in brown to harmonize with his red hair), and is not bothered too much by his deafness unless he is tired or nervous. He now has business schools in Chicago and Toronto and thirty-five in the British Isles. He feels that woman's emancipation has been achieved through the typewriter. An indefatigable talker, both on the platform and informally, he and his wife used to entertain in a novel fashion. One night there would be a group of writers, the week following, several explorers, and so on. He visits England almost every summer, reading and playing deck quoits on the way over, and riding around to visit relatives in the Austin which he keeps in London. In New York he lives with relatives in Gramercy Park, but spends a large part of his spare time playing billiards at the National Arts Club. Two years ago he took up golf, disliked it, and thrust his clubs into his office cupboard where they remain. He does not care for flowers, of which many are placed on his desk, but is very fond of children, of which he has none. Like many another person hard of hearing, he has been prevented from enjoying the cinema by the invention of talking pictures. He is a humble, kindly gentleman with a sense of humor and a specialty which has made him modestly proud and quite well-to-do. Because of the last, he is an exception in his family, simple people with neither pelf nor heraldic mottoes. John Robert Gregg has not only made the Gregg money, but he has provided the Gregg motto. It is that of his schools, *Motu Labente Pristina Superavimus*—"By Easy Gliding Motion We Have Triumphed Over the Systems of Yesterday."

Sausage Saga

THERE is only one proper way of hanging strings of sausage on a rack, and if he has the time, Frank M. Firor, president of Adolf Gobel, Inc., will show you how to do it. But Frank (one permits oneself the familiarity since no one in his office has ever called him anything else) has very little time for anything other than business, and it is still a matter of self-congratulation to a trade paper writer that he was able to keep

[*Continued on page 20*]



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100 BROADWAY

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How a New Trade Mark Policy

AFFECTING 58 EXECUTIVES, 139 SALESMEN, 10,314 DEALERS

Fortifies a $28,000,000 Business

A BUSINESS problem may resemble a critical situation in golf, and have a similar outcome—"bad trouble followed by a fine recovery".

The formulation of the trade mark policy of one of the largest building material producers in America is a case in point,—the adoption of *one* national brand in place of *eight* local brands.

In 1924 the trade mark situation seemed hopeless. Two southern mills were selling one brand, a western mill another brand, and an eastern mill a third. Soon five other units were to be added with their local brands,—all tending to make a bad situation worse.

It is true that the local names had their assets,—a certain amount of good-will, esprit de corps, established earnings. The liabilities, however, seriously outweighed the assets:

1. The prestige of the company was not comparable with that of its three dominant competitors.
2. The local organizations lacked institutional background and institutional spirit.
3. The company was paying, in duplication and waste, for lack of unified advertising and inability to use national publications.
4. They were handicapped in selling an engineer or contractor in a distant city who had never heard of the local brand.
5. The position of the company in matters of finance was also affected to some extent by the trade mark situation.

Hence, the company faced an almost endless number of problems which could only be solved by scrapping the local names around which a volume of $14,000,000 had been established.

Viewing this situation broadly, one may ask a number of obvious questions:

"If earnings were satisfactory and growing each year, why consider a change?"

"If there were compelling reasons for a change, why the delay?"

"Was it necessary for outside consultants to interest themselves in the matter; didn't the management see the advantages of one name over many?"

"If the management approved the unification idea, why not take action at once?"

The answer to the last question is the answer to the others: The key men in the business clearly saw the disadvantages of many local names, but no specific recommendation had been submitted that a majority could accept.

As in most problems, the final solution was simple; it grew out of the background of the business.

When in 1918, a group of New York bankers sought a man to reorganize three ailing mills, they canvassed the United States; and in Texas finally found the man they wanted, who as manager of a southern mill had set a new standard in quality of product, personnel and service.

Around him in 1919 they had organized the corporation with which we are concerned. In five years the business had grown from 2,500,000 units to 6,700,000. What he had done with the Texas business, he had trained his lieutenants to do in other markets with other subsidiaries, each with its local brand.

So it seemed wise to propose, as the national brand, the trade name used in Texas which was the symbol of his first success.

A few weeks later a report embodying this idea had been enthusiastically approved by each executive in New York, each member of the Executive Committee and the Board of Directors.

How the name was introduced, invested with meaning, and endowed with prestige is a separate story—the growth of a $28,000,000 volume on the basis of service.

THIS case illustrates one advantage of employing advertising consultants who work on a sound fee system. When the above trade mark problem was analyzed in the Cowan & Dengler office it took precedence over other matters. The use of commissionable space was actually discouraged in the face of an unsatisfactory corporate situation.

In this project, as in all questions affecting the client, his needs alone governed the work. What is more conducive to such a point of view than the unbiased character of the fee system?

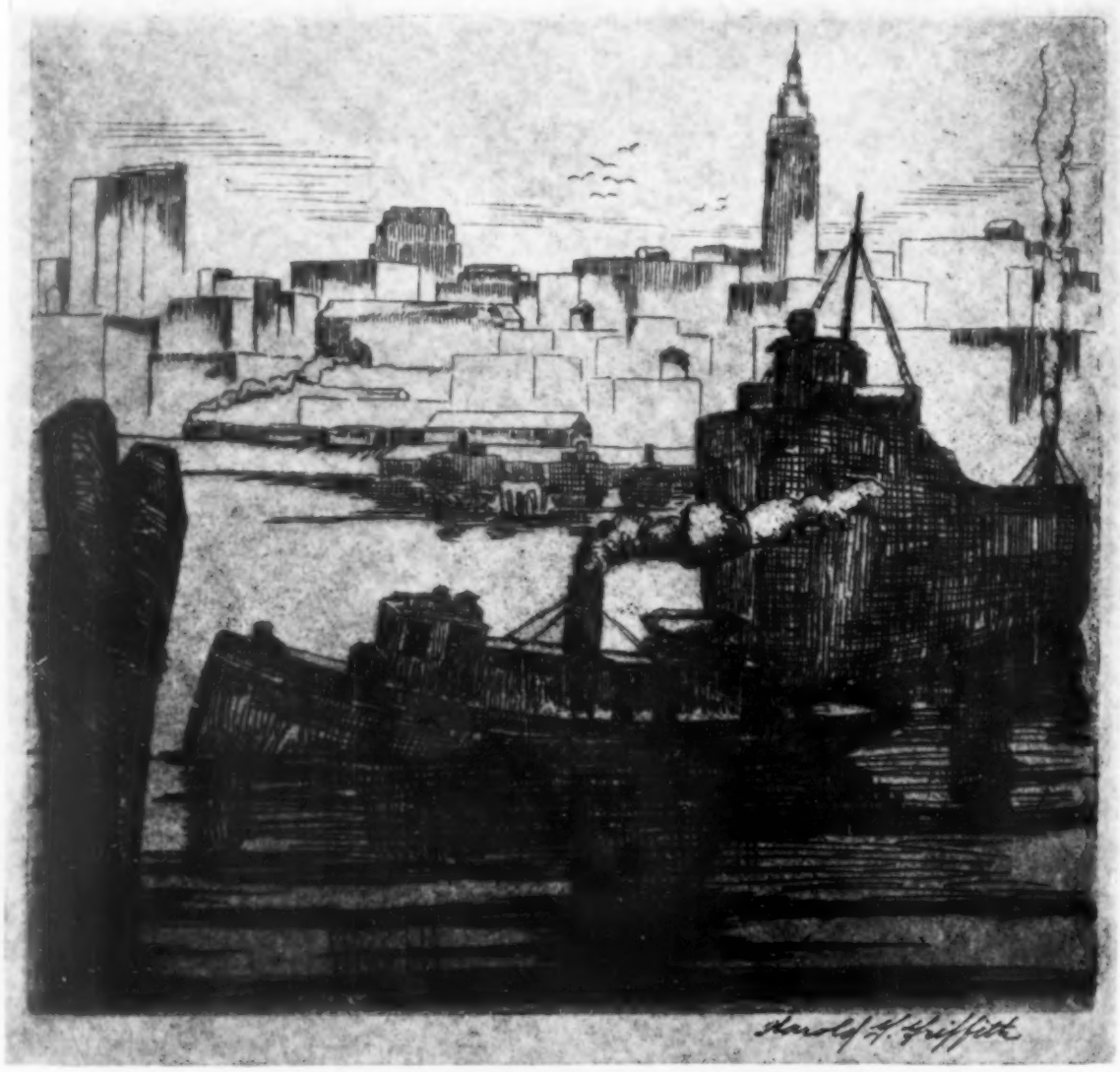
An explanation of the Cowan & Dengler fee system and examples of its practical value will be sent on request to interested executives.

COWAN & DENGLER

ADVERTISING • MERCHANDISING • SALES COUNSEL

NEW YORK

....IF YOU WANT STABLE MARKETS



WITHIN Cleveland's *immediate* trade territory are twenty-seven thriving industrial cities; 3,000,000 people; more than 5,000 manufacturing plants, employing more than 250,000 workers and paying $600,000,000 a year in wages. This great business community is bound together by railroads, traction lines, paved motor roads and, above all, common commercial interests. Employment is steady, labor skilled, wages satisfactory, and prosperity remarkably uniform.

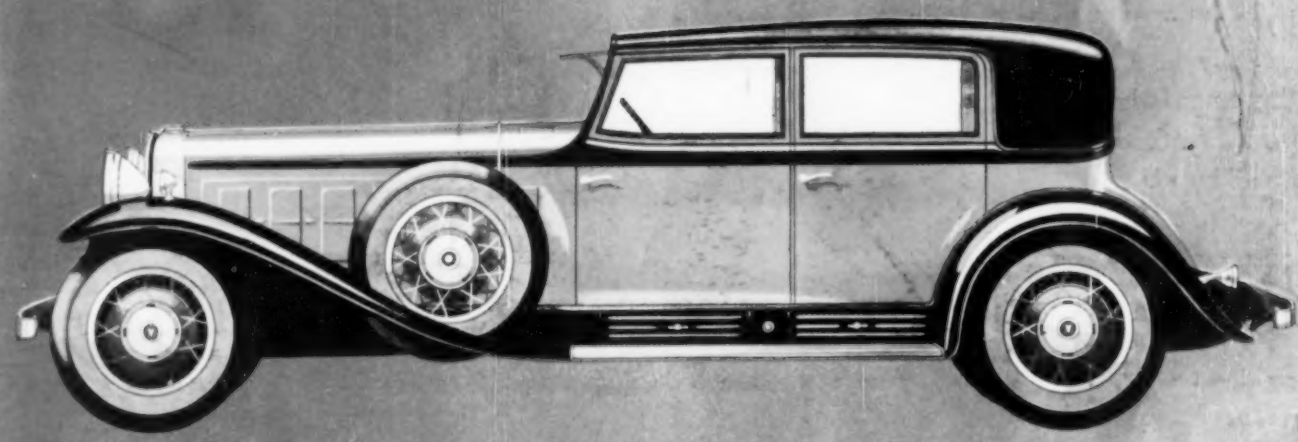
¶ To the manufacturer seeking a point where the maximum market will be reached along the shortest lines of operation, or where a distributing office or branch may be placed most strategically in an immensely wealthy district, Cleveland offers unusual opportunity.

¶ For specific data regarding the stability of the market of which Cleveland is the natural capital, write this Bank.

© G. T. Co.

GUARDIAN TRUST COMPANY CLEVELAND OHIO

RESOURCES MORE THAN $165,000,000



SIXTEEN CYLINDERS

In the Cadillac V-16, personal preferences, affecting even the major features of styling, may have free and distinctive expression . . . The bodies are of many types, custom-built and elaborately finished, and all highly individualized

CADILLAC MOTOR CAR COMPANY DIVISION OF GENERAL MOTORS

The Man *with the* HOE

dons a Dinner Jacket..

YOU might mistake him for the gardener, except that no hired man wields an implement with quite that absorbed enthusiasm.

And if you did you might be laughed at by the smartly coiffeured woman who appears with sympathetic urgency to tell him it's-really-time-to-dress-for-dinner, Dear, please-come-in.

No, he's not just the gardener (wouldn't have one probably). He's the owner of that pleasant home which rests within the garden like a colonial lady amid her flounces.

He's the owner, too (if you're not too careful what you say) of the woman-of-chic who insists so pleasantly and firmly that good manners are even more important than his precious garden.

He's the Man with the Hoe—1930 model. And there are 1,375,000 like him.

In the less important hours of his day he's a banker, professional man, business man. Prosperous — and getting more so. Enjoying life—and learning every day how to enjoy it more.

He and his wife form perhaps the most responsive and responsible market in this country.

Better Homes and Gardens reaches him—or her. Better Homes and Gardens reaches more like him than any other magazine in America. For Better Homes and Gardens goes to 1,375,000 families—and 85% of them own their own homes.

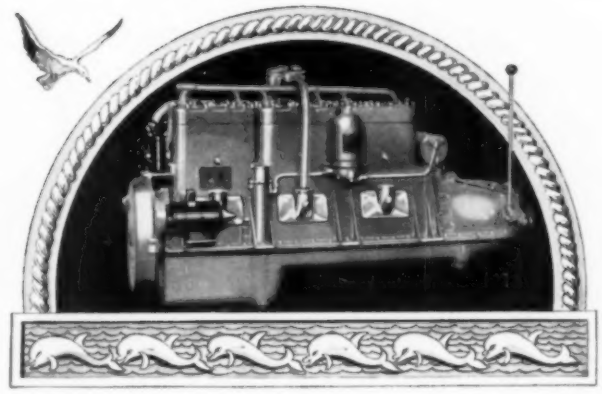
This single circulation—far larger than any other in its field—covers better than one in seven of all the owned urban homes in America. It has been obtained in eight years—not through forcing methods, not through fiction—but naturally, steadily, inevitably, because of articles which pictured better living.

Today gardening has become a vogue.

Families to whom our unparalleled prosperity has brought high buying power are turning to gardening and quite naturally.

Your advertisement in Better Homes and Gardens will reach these home-owning men and women, and reach them through their dearest hobby—when they are reading the magazine which helps them to improve their homes.

Better Homes *and* Gardens, ***Des Moines, Iowa***



A. C. F.•
BANFIELD
CHRIS-CRAFT•
CORSAIR "36"
DART•
DITCHBURN•
GAR WOOD "40"
HACKERCRAFT•
KING SEA-SKIFFS
LUDDOCO DREAM BOATS•
MATTHEWS•
MINETT-SHIELDS
ROBINSON SEA GULL
SEA LYON "40"•
STEPHENS
SUNBEAM "40"
WHEELER "PLAYMATES" •
Foreign
BRITISH POWER BOATS
OSBORNE-CRAFT--*England*
CLAUS CRAFT--*Germany*
CHANTIERS NAVAL
EXCELSIOR
DESPUJOLS--*France*
ORTHOLAN--*Argentine*
•Optional

DEPENDABLE POWER

The wide acceptance of SCRIPPS motors by so many prominent builders of standardized craft who offer them as standard or optional equipment is significant of SCRIPPS unfailing dependability.

Fifteen models—15 to 200 Horse Power
High speed and medium duty.

Interesting literature will be mailed on request

SCRIPPS MOTOR CO., 5844 LINCOLN AVENUE, DETROIT, MICH.

SCRIPPS

• THE MOTOR THAT CROSSED THE ATLANTIC •

Nauheim

itself is the only other spot on earth where The Glen Springs' famous treatments can be duplicated . . . Bathe in the natural Nauheim brine—drink the radio-active waters—let your whole system derive the inestimable benefits of a carefully-planned restorative schedule . . . Meanwhile, of course, golf—fishing—shooting—and a wonderful cuisine. For booklets, address Wm. M. Leffingwell, Pres., The Glen Springs, Watkins Glen, N. Y.

GLEN SPRINGS

THE AMERICAN NAUHEIM

A Personal Invitation to Hotel Hollenden

THE Hotel Hollenden is ideally located for the convenience of the visitor whether he is in Cleveland on business or pleasure. Within a block or two of the Hollenden will be found the leaders in practically every activity of the city. Just a block or two away are the theatres, the shopping centers, the banks, the Public Auditorium and the principal office buildings. Located right in the heart of things, the Hollenden has for decades served the requirements of the most discriminating visitors. Anything that is required of a good hotel may be found at the Hollenden. You are cordially invited to make the Hollenden your home when you are away from home. The Crystal Dining Room and the Hollenden Coffee Shop offer a variety of good eating places.

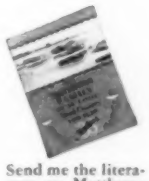
Sincerely yours,

Theo DeWitt
Vice Pres. & Gen. Mgr.

In Cleveland-it's The
HOLLENDEN
THEO. DE WITT,
Vice Pres. and Gen. Mgr.

Matthews Cruisers are STAUNCH ENOUGH *to Laugh at Any Weather*

You can take a staunch, rugged Matthews out to sea in any kind of weather. They are built to ride out anything that blows. Their husky hull design, their carefully molded underbottom construction, their smart bow flare insures a world of safety, cushions shock and guarantees a fine turn of speed. And for actual roomy comfort aboardship their design is without a counterpart. Large clothes lockers, extra large berths, completely fitted galley-kitchen, carefully arranged toilets and handsomely appointed cabin interiors combine with well proportioned deck spaces to provide you with every cruising comfort and convenience. If you've never inspected a Matthews "38" or "46" you cannot possibly appreciate the exacting values built into these handsome, long-lived hulls. A choice of ten models in twenty-four varying arrangements gives you a boat to match every cruising need.



Send me the literature on Matthews Cruisers without obligation today.

THE MATTHEWS COMPANY
Designers and Builders of Boats of Distinction . . . Since 1890
324 Bay Side Port Clinton, Ohio

ONE YEAR AGO

A Record and a Plane..by Buhl

ON August 21, 1929, the Sun God—a Buhl Standard Airsedan—landed in Spokane, Washington, having flown 7,200 miles from there to New York City and back without a stop, refueling in the air. This record was hailed at the time as a supreme achievement—the sternest test conceivable of man and plane. It assumes new significance today—its first anniversary—for records in these changing and hectic days of aviation are fragile things, at best of slight duration, *and this historic flight has not been equalled in twelve long months* though many have attempted it. Surely, there can be no more convincing evidence of Buhl superiority than this lasting exploit in the air—by Buhl alone. May we refresh your memory with an illustrated brochure that fully describes it?

BUHL AIRCRAFT COMPANY
MARYSVILLE -:- MICHIGAN

WHETHER YOU FLY FOR FUN OR FAME OR FORTUNE

Upon the conclusion of this momentous flight, Lieut. Nick Mamer wired, ". . . remarkable features of durability, stability and comfort Stop . . . performance at high altitudes under varying weather conditions carrying heavy overload was non-comparable." Lieut. Mamer now operates the International Air Transport Company, highly successful commercial airline between St. Paul and Spokane. It is significant that the only planes he flies . . . and the fleet will number nine on the completion of scheduled deliveries . . . are EXCLUSIVELY AIRSEDANS.. by Buhl

Off the Record—*Continued*

Mr. Firor at his desk for a fifteen-minute interview last year. Mr. Firor is president of a company which produces 1,248 items of meat, which has packing houses in Manhattan, Brooklyn, Washington, D. C., Pennsylvania, and the Mid-west, which in 1929 had net sales of $46,032,417, and yet some of Mr. Firor's earliest small retailer customers still telephone him personally when they make their orders. "So hurry the fresh liver rings and the braunschweiger, Frank, as I am fixing up sandwiches for my lodge." Or, "I need a case, Frank, of the jellied pork tongues." And Frank will listen and the order be executed.

FRANK M. FIROR

Mr. Firor is fifty-eight years old. He was born on a farm in Graceham, Maryland, of parents whose German ancestors had settled in the U. S. some 250 years ago. For a while he clerked in a village store, then became assistant to his father-in-law, a Washington, D. C., baker. It was then that he discovered that although he loved sandwiches and ate them continually (he still does), he did not like the delicatessen meats. So with no experience but with several ideas he went to New York and got a job in the butcher shop of George Kern (at about the same time Adolf Gobel was launching a rival concern in Brooklyn). The business of Mr. George Kern grew and with it the responsibilities of Mr. Firor, who became a buyer, then vice president, and then president. In 1926 Adolf Gobel, the president of the rival and parallel concern, died and Lehman Brothers, who acquired the concern, began calling on Mr. Firor. In 1927 the two companies were merged, and Mr. Firor became president of the combined unit. His first action as such is interesting. He promptly called a meeting of the truck drivers of the two companies, who had long been embattled and bitter rivals (most of the company's sales are for cash and most of them are distributed by the company's own trucks). "Now see here," said President Firor, "it's one family now. I'm working for one company and so are you. And if I find any of you who don't—then I get in the scrap." Whereupon he took off his coat and rolled up his sleeves. It pleased the men enormously, and there is no record that Mr. Firor has ever had to prove his fisticuffing abilities.

. . .

Far different from Gobel's but worthy of mention with it is the sausage business of the Jones family in Fort Atkinson, Wisconsin. It was started quite accidentally, for the original Milo Jones, after he had left his natal Vermont and settled in what is now Wisconsin, intended only a dairy farm. The cooking of his wife, known far and affectionately as Aunt Sally, however, won much praise, most of which was directed to her sausages. Years later when Milo was dead and Milo II was stricken with arthritis and unable to attend to the dairy, the Jones descendants remembered Aunt Sally's sausages and the formula thereof and began to make them for sale. At first power was supplied by an old and willing horse who walked round and round in a circle outside the kitchen window while the Jones mills ground slowly. The trick then was that the Joneses filled their sausages with good and otherwise marketable meat whereas other sausage dealers used an inferior quality for their sausages. "Most little pigs go to market, but the best little pigs go to Jones . . . " sang their advertisements a few decades later. Slowly at first the sausages sold. But the years brought railroads to Wisconsin, and as the

[*Continued on page 26*]

MANSION

AND

COTTAGE

THIS NEW STANDARD OF LIVING COMFORT APPLIES TO BOTH

The most interesting phase of the nation-wide growth of Gas Heating is its popularity with both "Mass" and "Class". Most commodities of an investment nature are limited in their appeal to a restricted section of our population. Here is one that reaches the great majority. » In the small home occupied by the family of modest means the complete elimination of the time and labor of furnace-tending is the major appeal of gas heating. » In the large residence where wealth resides the absolute and healthful uniformity of inside temperatures, regardless of weather fluctuations outside, is the deciding factor. » How great a market is thus made available to gas companies, through the use of automatically-controlled, gas-designed boilers and furnaces, is self-evident. » Progressive gas companies are alertly alive to this opportunity and are aggressively cultivating it.

BRYANT
GAS
HEATING

© 1930, BHMC

THE BRYANT HEATER & MANUFACTURING CO.
17854 ST. CLAIR AVENUE · CLEVELAND, OHIO

Alfred Nelson Co

580 FIFTH AVE. N. W. Corner 47th Street NEW YORK

We are noted for making the finest strictly hand-tailored to measure *all occasion attire* for *men* and *cross saddle* riding and hunting *kit* for *women.*

They would,
if they could,
but they're wood

A wooden soldier can never join the "thin red lines of 'eroes." No man ever got to be a Captain of Industry except by IDEAS. Fine writing may paint pen pictures that are SWELL, but only ideas produce action pictures that SELL. For creative ideas in advertising we are headquarters—with the accent on the HEAD . . . .

MARTIN ULLMAN
250 Park Ave · New York
Eldorado 6967

Package Designing · Merchandise Styling

SW&Co
A NATIONAL ORGANIZATION FOR CONSTRUCTIVE SERVICE

Scovell Wellington
and Company

ACCOUNTANTS · ENGINEERS

10 East 40th Street, New York City

BOSTON CLEVELAND CHICAGO PHILADELPHIA
SPRINGFIELD SYRACUSE KANSAS CITY SAN FRANCISCO

VIOLA ROOT CAMERON
Genealogist
ESTABLISHED IN 1913

FAMILY HISTORIES
COMPILED AND PUBLISHED

COATS OF ARMS

CORRESPONDENCE INVITED

521 FIFTH AVENUE
NEW YORK

57 CHANCERY LANE
LONDON

MAYFLOWER HOTEL
WASHINGTON, D. C.

PARIS BERLIN

COROC

HAS GIVEN AVIATION A STURDY, CRACK-PROOF FINISH FOR ITS AIRPLANES . . . . . .

Aviation needed a crack-proof, element-resisting fabric finish. Cook's developed it . . . a tough, durable coating for aircraft fabric that withstands the beating punishment of excessive wind and rain and heat . . . COOK'S COROC FABRIC FINISH. ¶ Pledged to greatest endurance and performance, Stinson Aircraft utilizes this finish with the certainty of longest fabric life. Proved in exacting tests, COOK'S COROC FABRIC FINISH has given aviation an exceptional coating. ¶ There are other performance-proved COROC aviation finishes which comprise a complete line for finishing all plane parts, whether wood, metal or fabric—inside or out.

Whether for aviation or for other industrial finishing needs, the name COOK'S COROC identifies a special finish, developed for a particular industrial need and pledged to do that job most economically and serviceably.

COOK'S COROC FABRIC FINISH

HAS MET ONE OF AVIATION'S MOST EXACTING REQUIREMENTS

. . . STINSON . . .

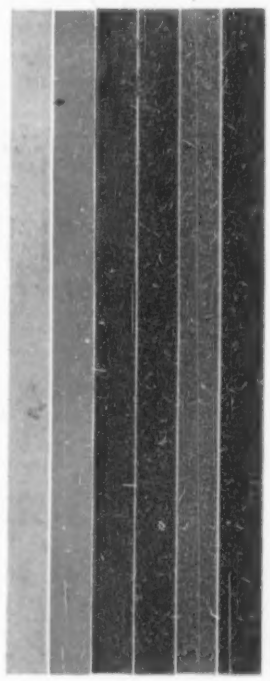
AIRCRAFT USES

COOK'S COROC FABRIC FINISH,

GIVING THE FINISHING QUALITY TOUCH TO A QUALITY PLANE

COROC

IS THE TRADE-NAME OF A VARIETY OF FINISHES FOR SPECIFIC USES, PLEDGED ALWAYS TO DO EXACTING JOBS PERFECTLY . . . AND ECONOMICALLY



Cook's aviation finishes shared in the honors of making two flight endurance records—that of the monoplane Fort Worth, and, later, the St. Louis Robin.

COOK

PAINT & VARNISH COMPANY

FACTORIES IN CINCINNATI, DETROIT, ST. LOUIS
KANSAS CITY, HOUSTON AND FORT WORTH
. . . . . BRANCHES IN PRINCIPAL CITIES

The pause that refreshes on the fastest liner afloat

EUROPA, fastest liner afloat, excites the admiration of the world. It adds to speed luxurious comfort. Passengers take brisk walks around the long promenade, play games, dance. Inevitably, comes the need for *a refreshing pause*. And naturally, you find a cool and cheerful soda fountain serving ice-cold Coca-Cola. » » » Bremen, sister ship and rival for honors in speed, is similarly equipped. Today nearly all the popular ocean liners serve Coca-Cola. For years it has been a standby of the officers and men of the United States Navy. A pause for this drink, with that tingling, delicious taste and its cool after-sense of refreshment, sets you up for a fresh start, whether afloat or ashore.

THE BEST SERVED DRINK IN THE WORLD

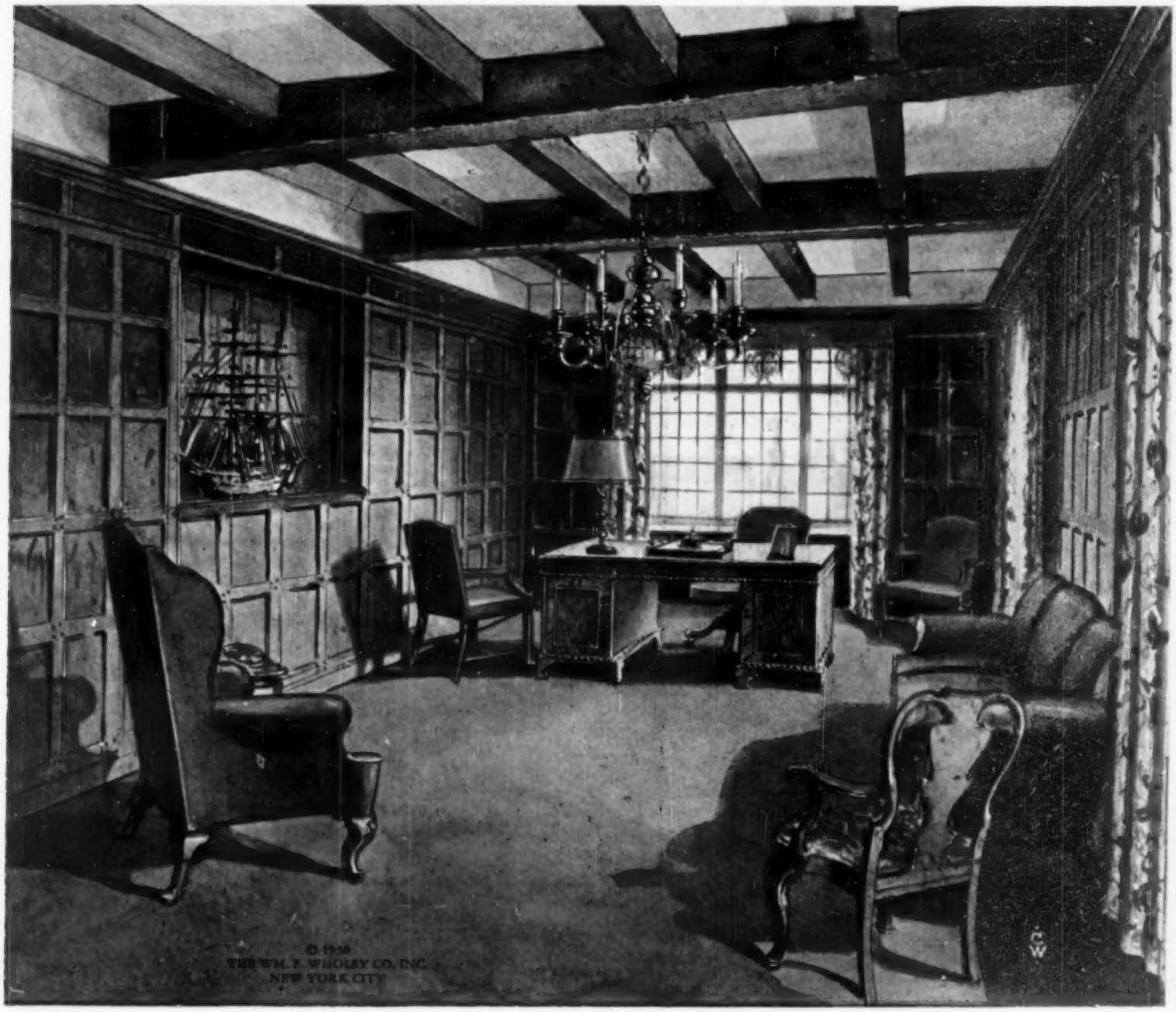
A pure drink of natural flavors served ice-cold in its own glass and in its own bottle: The crystal-thin Coca-Cola glass that represents the best in soda fountain service. The distinctive Coca-Cola bottle you can always identify; it is sterilized, filled and sealed air-tight without the touch of human hands, insuring purity and wholesomeness.

LISTEN IN ~ Grantland Rice ~ Famous Sports Champions ~ Coca-Cola Orchestra ~ Wednesday 10:30 to 11 p. m. Eastern Daylight Saving Time ~ Coast to Coast NBC Network.

The Coca-Cola Company, Atlanta, Ga.

NINE MILLION A DAY

WHO *wouldn't* DO BETTER WORK IN SUCH A *livable* OFFICE?



High above the city's din, overlooking sparkling waters, guarded by Liberty's proud torch, is the restful office of
MR. W. H. BAKER, *President*, MERRITT-CHAPMAN & SCOTT CORPORATION

A COMFORTABLE, harmonious room in which to *live* during one's important working hours, is no longer considered a *luxury*.

The business home of good taste is now recognized as a sound investment, capable of producing large dividends in better individual work, better representation of one's company or position and better impression upon one's visitors.

Pioneers in the creation of *livable* offices, this organization now designs, builds and furnishes business homes of distinction, coordinating every detail so thoroughly as to assure a completely satisfying result, with economy of outlay.

Studies of individual requirements and visual suggestions are gladly made, without obligation, for the type of men who read "FORTUNE"

The WILLIAM F. WHOLEY CO. *Inc.*

Equipment Specialists

11 East 36th Street, New York

Office Furniture ~ *Interior Decoration* ~ *Office Planning*

THE *protection of a Fortune is usually assured by the creation of a planned investment program which is designed to meet the Investor's individual needs.*

WE OFFER YOU THE FACILITIES OF
THIS INVESTMENT ORGANIZATION

STONE & WEBSTER
AND BLODGET
INCORPORATED

NEW YORK · BOSTON · CHICAGO · PHILADELPHIA

people ate more Jones sausages they brought more demands to the Joneses. The descendants of Milo found themselves rich enough to advertise and big enough to build a plant. There are members of the third, fourth, and fifth generations of them now living in Fort Atkinson on the Jones farm. They are all well and all happy. So much success with a sausage . . . !

Ewald's Three in One

NOBODY can really blame Mr. Henry Theodore Julius Charles Frank William Ewald for having abbreviated his name to Henry Theodore Ewald. Most of his family was present at his christening, and most of them wanted their names carried on to another generation. His father and mother compromised by pleasing everybody and giving him half a dozen names, but today Mr. Ewald has the greatest difficulty in remembering them or the order in which they appear.

Mr. Ewald was once a newsboy, then a shipping clerk with the Detroit & Cleveland Navigation Company, and then with a young man named Frank James Campbell he went into the advertising business. Mr. Campbell had just founded a small agency with one General Motors account. Today Campbell & Ewald handles most of the G. M. accounts, which make for 90 per cent of the agency's business and which are also sufficiently large to place the agency among the country's five largest.

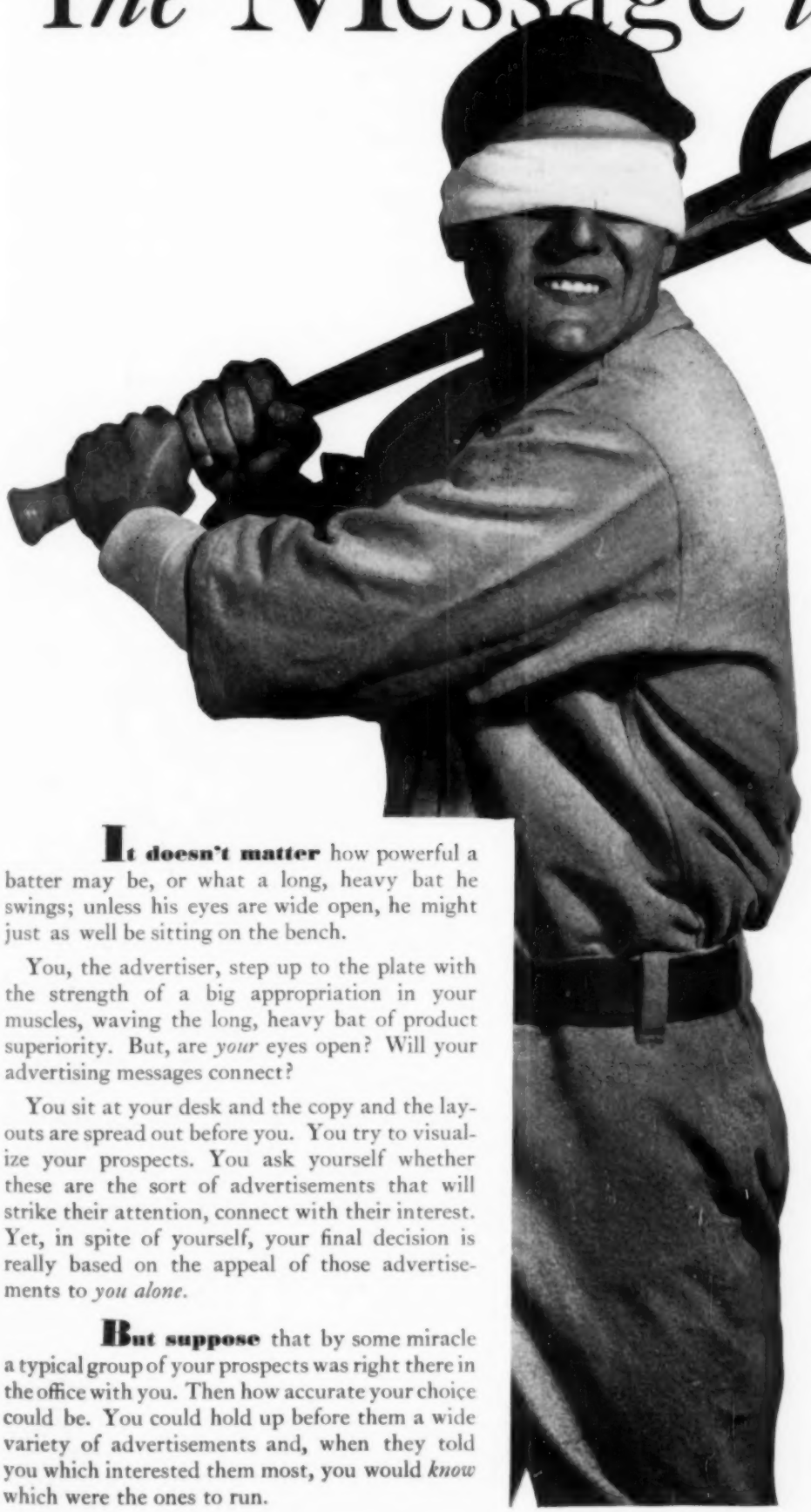
Mr. Campbell now spends most of his time traveling. Mr. Ewald still spends most of his time pondering the affairs of Campbell & Ewald and can quote, without reference to data, ancient business figures which most executives would have filed and comfortably forgotten. Mr. Ewald's chief diversion is golf, and this year probably marks the pinnacle of his golfing career. For while it is sometimes given to man to make a hole in one, it is rarely given him to make three in the same year. This feat Mr. Ewald has accomplished. The third caused him almost as much embarrassment as pleasure. For he made it at the Bloomfield Hills Country Club, of which he is a member. And he had previously offered a silver cup to each member who made a hole in one. Mr. Ewald could not figure out whether he should present himself with his own trophy. The board of governors, however, put him out of the difficulty and gave him a cup.

Currier & Ives Renaissance

Their prints of sporting scenes and rural life are probably the most famous. Very popular in its day was the print, "Home for Thanksgiving," and a series of western prints titled "American Frontier Life" also enjoyed considerable vogue. Remembered by most Southerners is the Currier & Ives print of the famous race between the two Mississippi river-boats, the *Natchez* and the *Robt. E. Lee*. The firm of Currier & Ives, publishers of prints, was founded as N. Currier in 1834 by the late Nathaniel Currier. His friend, the late Mr. James M. Ives, joined him in partnership several years after the founding. The prints of no American firm are as well known as theirs, and their discovery and acquisition still make the joy of sportsmen and collectors. After the death of the Messrs. Currier and Ives, the business of the firm was carried on by their sons, but in 1907 the firm ceased operations.

Three years ago, however, the house of Currier & Ives was reborn. President of the new Currier & Ives, Inc. (with which no Ives is associated) is Mr. Everett R. Currier, a distant relation of the original Nathaniel, once connected with the Harvard University Press, a member of the Grolier Club, and known among typographers as a printer of excellent books. During 1930 and 1931 his firm carrying on the old tradition will produce a series of American sporting prints drawn by Mr. J. W. Williamson and Mr. Everett Henry. Among the subjects will be the 1930 International Yacht Races, the Dempsey-Tunney boxing match at Chicago, Gallant Fox winning the Belmont. The first of these, which FORTUNE reproduces in full color on page 36 of this issue, shows Robert Tyre Jones Jr. winning the 1927 British Open Golf Championship at St. Andrews. The drawing is by Mr. Williamson. Its appearance coincides with Mr. Jones' most successful golfing year.

The Message *that doesn't* Connect



Guessing

at the Kind of Advertisements that *Your Prospects will Respond to* is like trying to knock a Home Run *Blindfolded*

It doesn't matter how powerful a batter may be, or what a long, heavy bat he swings; unless his eyes are wide open, he might just as well be sitting on the bench.

You, the advertiser, step up to the plate with the strength of a big appropriation in your muscles, waving the long, heavy bat of product superiority. But, are *your* eyes open? Will your advertising messages connect?

You sit at your desk and the copy and the layouts are spread out before you. You try to visualize your prospects. You ask yourself whether these are the sort of advertisements that will strike their attention, connect with their interest. Yet, in spite of yourself, your final decision is really based on the appeal of those advertisements to *you alone*.

But suppose that by some miracle a typical group of your prospects was right there in the office with you. Then how accurate your choice could be. You could hold up before them a wide variety of advertisements and, when they told you which interested them most, you would *know* which were the ones to run.

There would be no chance of wild, misdirected, expensive swings, no chance of messages that failed to connect.

Instead of preparing one set of ads and taking a chance on their being profitable, we in this agency prepare several sets and we put into every individual advertisement as much thought and skill as if it were the only one to be produced.

Then, before one dollar of our client's money is spent for costly art work, plates and space, we find out which of these many advertisements will be most effective in making sales. Hence, every message published is a message that connects.

You could spend no more interesting half-hour than going over actual instances of ads that won and ads that failed. George Enzinger of Milwaukee, or J. W. Lee, Jr. of New York would be more than glad to show some of these fascinating records to you and your associates.

DYER-ENZINGER COMPANY, INC.

New York · Chicago · Milwaukee

EIGHT YEARS IN AN EAGLE'S NEST

That is the story, in brief, of two A. B. A. travelers cheques issued to George Walker by the Montrose National Bank of Montrose, Colorado. Lost in September, 1920 they were carried on the "missing" ledger of the A. B. A. until December, 1928, when B. D. Reazin returned them to the bank of issue, with the report that he had found them in an eagle's nest near Butte, Montana . . . five hundred miles from the place where they had originally disappeared.

The cheques were still unimpaired. Eight years of western sun and snow had made no impression upon their tough fibre. Such amazing durability yields to but one explanation — the cheques were made on Crane's Bond, the 100% new white rag paper that has been the leader of the Crane line since 1801.

Time . . . weather . . . an eagle's talons . . . take no toll of its excellence.

CRANE'S BOND

CRANE & CO · DALTON, MASSACHUSETTS

A Statistical Survey

AUDACIOUS indeed is the traveler who still inquires: ". . . and how is business?" Audacious, too, the organization that would attempt to learn more than has been told by the Federal Reserve Banks, the larger statistical services, and such lone bulls as the itinerant Mr. B. C. Forbes. Last month the wide-flung Paramount Publix Corp. displayed such audacity and decided to find out for itself just what the state of trade is and when it will improve.

In 398 cities (although only forty-one states) are 1,100 Paramount theatres. Each theatre has a manager. He is sure to be a fairly intelligent man, likely to be a college graduate. He has multiple contacts in his community, for in feeling the amusement pulse he must feel all others. He is a big depositor in a local bank, and therefore can obtain the bank president's honest opinions. While he helped create the 65 per cent increase in Paramount's earnings for the first half of this year, he would prefer that Paramount have no false impressions regarding prosperity in his region lest his results seem less notable. Considering this composite person, Paramount put its probe into his hands.

This was done by sending each manager a questionnaire. Five of its six questions dealt with specific matters. The results obtained from the answers differ only slightly from other reviews. But the replies to Question 6, giving bankers' opinions on when a change might be expected, were more interesting and constitute the investigation's most valuable contribution. As might perhaps have been prophesied, the majority of bankers said they expected better conditions in the fall. Exactly a quarter either saw no improvements in sight or expected none till spring of next year. Approximately one-seventh thought conditions were already improved. On a percentage basis, the tabulation of opinions showed:

	Conditions already changed for better	*Expect change for better in fall*	*Expect no change till spring, 1931*	*See no prospects of improvement*
TOTAL UNITED STATES	14	61	11	14
NEW ENGLAND	24	60	6	10
MIDDLE ATLANTIC	4	59	15	22
EAST NORTH CENTRAL	7	65	17	11
WEST NORTH CENTRAL	21	57	9	13
SOUTH ATLANTIC	12	57	21	10
EAST SOUTH CENTRAL	18	55	18	9
WEST SOUTH CENTRAL	11	62	3	24
MOUNTAIN	4	75	4	17
PACIFIC	9	55	9	27

The other five questions gave a composite picture of the nation's condition, and likewise showed interesting geographical divergences from the average:

No. 1—Are stocks of goods in merchants' hands above normal, below normal, or about the same as June, 1928?

Sixty-three per cent of the replies said below; 11 per cent better. On the Pacific Coast, no answers indicated inventories were above 1928, while in the Middle Atlantic States 18 per cent of the answers told of increased stocks.

No. 2—Ask your local banker if savings are being accumulated from current incomes?

"Yes," said 75 per cent of the bankers, the lowest percentage being the South Atlantic State's 60.

No. 3—Is general business better, worse, or the same as at this time last year?

Seventy-eight per cent of the opinions were "worse," only 8 per cent "better." The Pacific Coast was unanimous in its answer that business is worse.

No. 4—Is general business worse, better, or the same as it was two years ago?

More significant than the answers to Question 3, the replies to this indicated a 72 per cent opinion that business is worse. Nineteen per cent said that it is the same.

No. 5—Is unemployment in your vicinity greater, less, or about the same as in June, 1928?

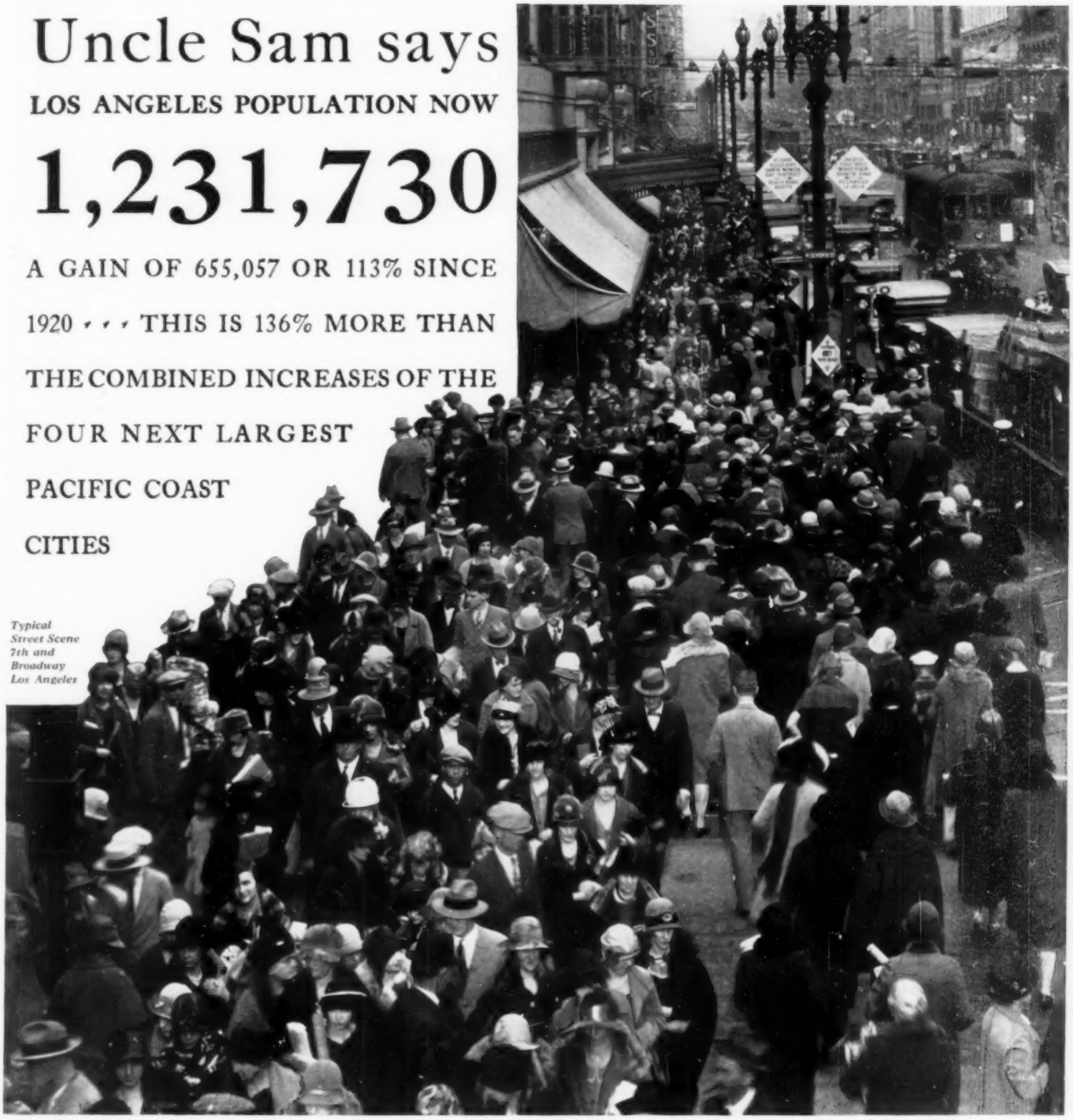
While the Pacific Coast unanimously took the most pessimistic view, only 74 per cent of the replies agreed; 23 per cent said unemployment is the same; 3 per cent less.

Uncle Sam says

LOS ANGELES POPULATION NOW

1,231,730

A GAIN OF 655,057 OR 113% SINCE 1920 • • • THIS IS 136% MORE THAN THE COMBINED INCREASES OF THE FOUR NEXT LARGEST PACIFIC COAST CITIES

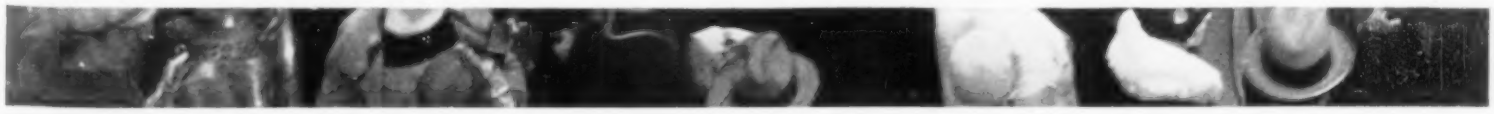


Typical Street Scene 7th and Broadway Los Angeles

Industrial Los Angeles *County*

POPULATION 2,199,657

MANUFACTURING EXECUTIVES ARE INVITED TO WRITE TO THE INDUSTRIAL DEPARTMENT, LOS ANGELES CHAMBER OF COMMERCE, FOR DETAILED INFORMATION REGARDING THIS GREAT WESTERN MARKET



"Modernization" — Profit's Fountain of Youth

FOR industry also "youth is not a thing of supple knees," but the faculty of meeting the new order with new methods and new devices for better production—at a profit.

In your plant also, profit will be earned in proportion to its modernization in methods as well as machines.

It is a subject of huge importance which deserves examination. Perhaps we can assist you with facts out of successful experience.

J. E. SIRRINE & COMPANY

Engineers

Greenville South Carolina

ART IN INDUSTRY

In connection with the opening of their new first floor and the painting therefor of murals by Mr. Boardman Robinson, the Kaufmann Department Stores, Inc. of Pittsburgh, Pa. announces a prize essay contest on the subject "Art in Industry", the prize to be $1,000 and the prize-winning essay to be published in a forthcoming issue of FORTUNE. Among the judges will be Mr. Norman Bel Geddes, Mr. Joseph Urban, Mr. Edgar Kaufmann.

Rules of the Contest

(1) The Contest is open to anyone (excluding employes of Kaufmann Department Stores, Inc. or Time, Inc.) who submits an essay of less than 5,000 words which deals with some particular phase of or with the general subject of Art in Industry.

(2) The contest opened Saturday, May 31, 1930. All manuscripts must be in the hands of the Art in Industry Contests Editor, Kaufmann Department Stores, Inc., Pittsburgh, Pa., by midnight, Saturday, January 31, 1931. Manuscripts received after January 31 will not be considered.

(3) The prize-winning essay will be published in a forthcoming issue of FORTUNE.

(4) The essays will be judged by a committee which will include Mr. Norman Bel Geddes, Mr. Joseph Urban, Mr. Edgar Kaufmann.

(5) All manuscripts must be typewritten and have the name and address of the contestant in the upper left hand corner of each sheet of paper.

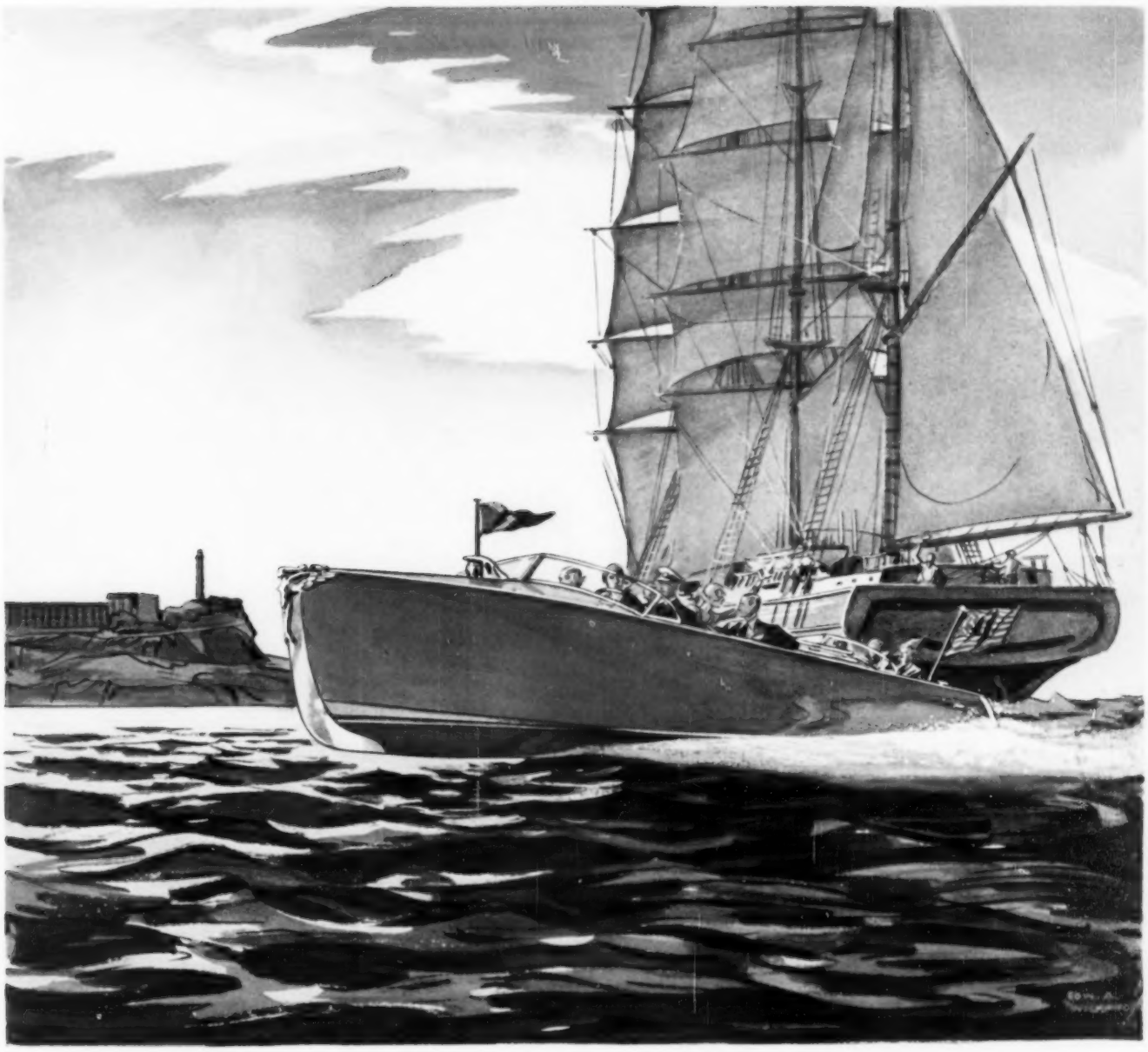
(6) Only one essay may be submitted by each contestant.

(7) Prize for the winning essay will be $1,000. In case of tie, each winner will receive the full amount of the prize. All information regarding the contest may be obtained from the Art in Industry Contests Editor, Kaufmann Department Stores, Inc., Pittsburgh, Pa.

(Signed)

Kaufmann Department Stores, Inc.

Fifth Avenue Pittsburgh



IN SAN FRANCISCO BAY — THE DODGE 28-FOOT SPEEDSTER — 300 H. P. — 45 M. P. H. — PRICE, F. O. B. WORKS, $4500

FROM sunrise at Montauk Point till sunset at the Golden Gate, Dodge Boats now breast the waters of America in ever increasing quantities · · · The world of business has never seen a faster growth to dominance than that of Dodge · · · The world of sport has never seen finer boats · · · The new tidewater plant of Dodge—largest in the world—does more than build boats in tremendous quantities · · · it builds them finer and speedier · · · The 28-foot Dodge speedster, with its Lycoming-built 300-horsepower engine, is an example of the cost-reducing power of quantity production · · · Planked with genuine mahogany with bottoms double-planked · · · with speeds of better than its rated 45 miles an hour · · · it is priced at $4500, much less than the cost of comparable speed and power, security and beauty in any other boat · · · It has the same dependable construction features of all Dodge Boats · · · the 16-footer at $945, the 21-footer at $2100, the 25-footer at $2500 and other models · · · Write for the Dodge catalog that illustrates and describes all Dodge Boats.

DODGE BOATS

HORACE E. DODGE BOAT & PLANE CORPORATION, GENERAL SALES DEPARTMENT, 21 WEST 46th STREET, NEW YORK, N. Y., WORKS: NEWPORT NEWS, VA.

CAUSE

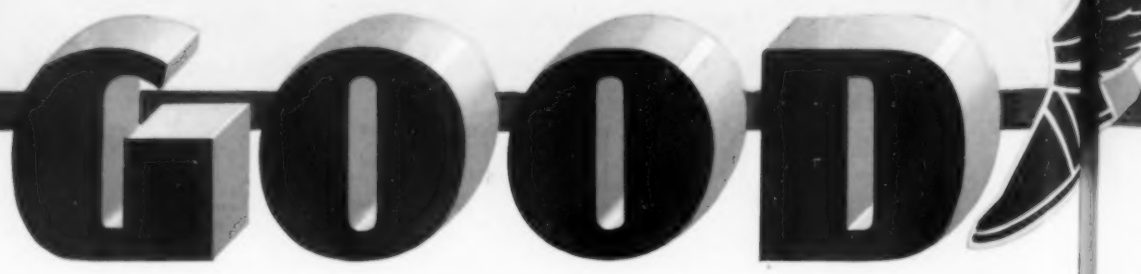
The first long distance highway motor transport to demonstrate its utility to the American public was the now famed Goodyear Akron-to-Boston Express.

The successful operation of this transport paved the way for general acceptance of the pneumatic truck tire, in the development and perfection of which Goodyear pioneered.

As roads and engines have improved, the need for higher truck speeds and lower tire costs has called imperatively for a new type of truck tire for new conditions.

Goodyear engineering and development departments have responded with the Goodyear balloon tire for trucks, a product which exemplifies the initiative and manufacturing competence that justify Goodyear's position as the largest rubber company in the world.

P. W. Litchfield
President



RESULT

THE MODERN BALLOON TRUCK TIRE, BY GOODYEAR

This remarkable tire does for motor trucks what the balloon tire has done for the automobile. Features: 1. The outstanding tire for inter-city and inter-state traffic. 2. Greater in air capacity. 3. Greater in flexibility of sidewalls. 4. Cool-running—free from the destructive heat which speed developed in former tires. 5. Absorbs shocks instead of fighting them. 6. Protects loads and mechanism from jolts and jars. 7. Travels all roads at higher average speeds in safety. 8. Holds road on curves, on hills, in snow, and in soft going. 9. Brings tire costs back to levels even lower than they were before trucks stepped up to passenger car speeds. 10. Permits saving of weight in truck design, permitting greater per cent of pay load.

GOODYEAR

© 1930 by The Goodyear Tire & Rubber Co., Inc.

A S K T H E M A N W H O O W N S O N E

Luxurious Transportation

A tale from the Arabian Nights relates how the Sultan's son, Prince Houssain, secured for a fabulous sum the Magic Carpet which transported its owner wherever he might command

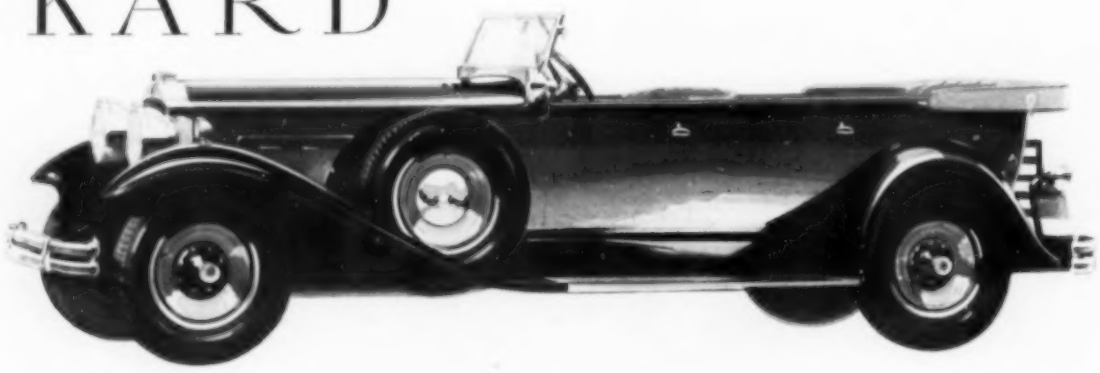
* * *

Throughout the centuries—since before the dawn of history—man's imagination has ever conjured up new and more luxurious modes of travel. But it has remained for the last thirty years to provide a vehicle so silent, swift, luxurious and beautiful that the modern reality surpasses the most miraculous flights of fancy the ancients knew.

Today the man of moderate means may easily own a finer personal conveyance than kings and emperors, with half the world their slaves, could command in ages past—finer than wealth could buy even a generation ago. Packard, after thirty years, has made today's most luxurious transportation available to all who appreciate and want the finest—who know that in the end it is the best investment.

For Packard builds nothing less than a Packard. And its world-wide reputation for supremacy has created a demand which makes the *price* of excellence now but little more than that of mediocrity. While long life and unchanging design make Packard *ownership* cost *no* more.

PACKARD



Volume 11

Fortune

Number 3

Contents for September 1930

Bobby Jones 36

A.T.&T.

Its Stock 37

Its Board 41

Canadian Pacific 42

Its Ships 48

Its Competitor 51

Al Smith 52

Skyscrapers 54

Newspictures 60

Medicines 68

Pinkham 71

Swimming Pools 74

Rubber

A Man 78

Crude 80

Big Companies 85

Models 89

Anti-Trust Law 94

• • •

Off the Record 8

A Survey 28

Supplement 129

Appendix 144

for October

Chrysler Engineering . . . . . Sulphur . . . . . Labor Unions

Drug, Inc. . . . . Germany . . . . . Skyscrapers . . . . . Persian Rugs

Nitrates . . . . . Adams Family . . . . . Movies

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The Royal and Ancient Golf Club
St. Andrews, Scotland, July 15, 1927
Aubrey Boomer, runner up. Score 291

Robert Tyre Jones, Jr., winning the Briti

REPRINTED IN FORTUNE MAGAZINE BY SPECIAL PERMISS

From an original drawing by J. W. WILLIAMSON. ~ *Dedicated by permis*

British Open Golf Championship

Tota
being
score

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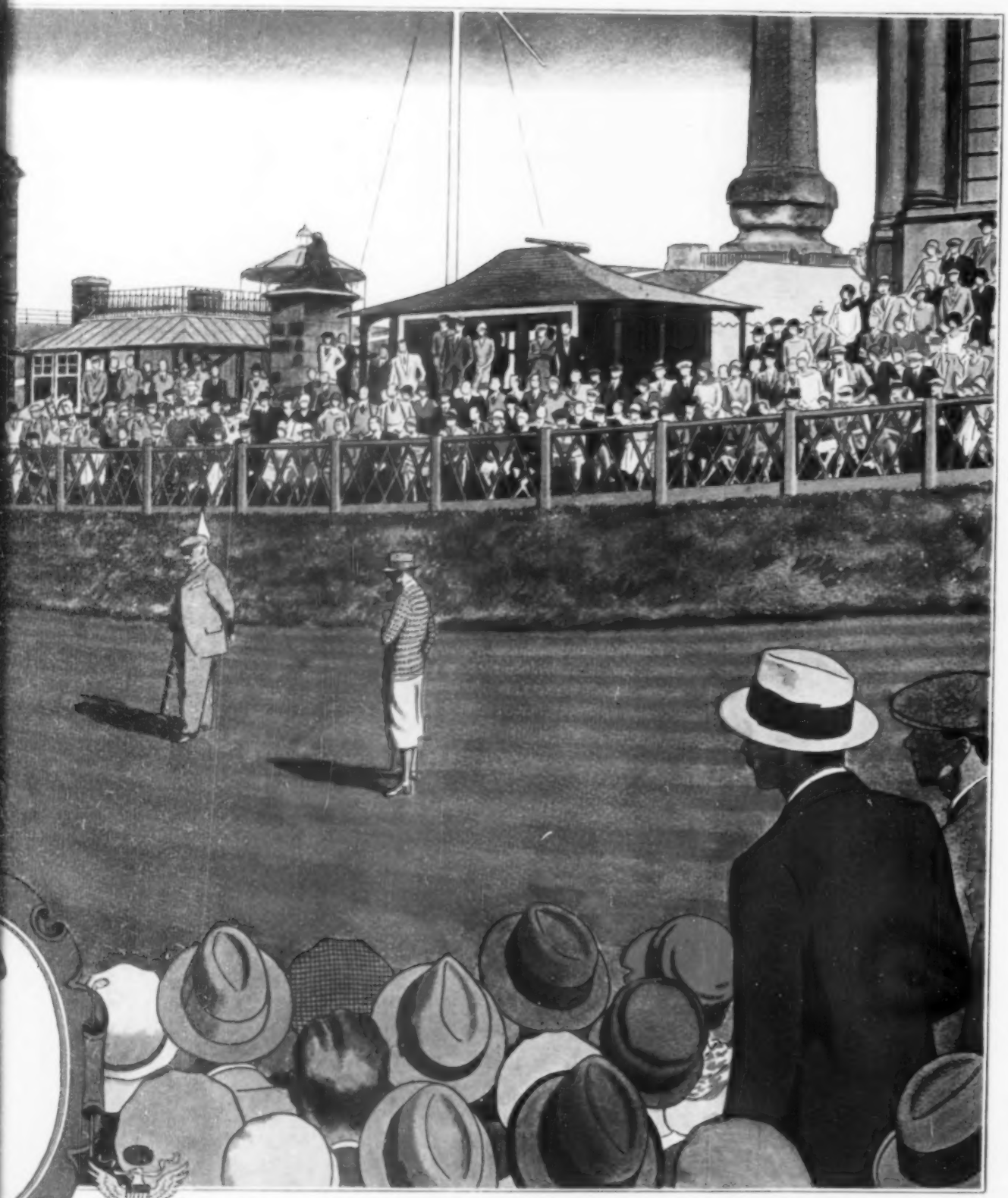


From an original drawing by J. W. Williamson. ~ *Dedicated by permission to* Robert Tyre Jones, Jr.

British Open Golf Championship

Total score 285 strokes for 72 holes, being six strokes lower than ever scored previously in the British Open

PERMISSION OF CURRIER & IVES, INC.

Ernest Hamlin Baker

World's Biggest Corporation

A study of A.T.&T. common stock. The central fact is a social philosophy which one type of financial mind is congenitally unable to grasp.

ONE of America's dozen greatest industrialists was asked what stocks he would buy if he had $500,000 and no more to invest in common stocks.

"I would put," said he, "$200,000 in American Telephone & Telegraph . . ."

It is such statements as this, repeated in modified form dozens of times daily, that justify the characterization of A. T. & T. as the premier stock of the entire U. S. If a small investor insists upon buying common stock, he is likely to be told: "A. T. & T." If a great capitalist finds himself with several hundred thousand to put away, he is likely to think, "Well, in the long run, I can't do better than A. T. & T." In short, it would seem that there is almost no investor in a great nation of investors for whom A. T. & T. is not appropriate.

This inquiry will concern itself with the almost universal favor in which the Telephone stock is held. For this favor presents an extraordinary paradox.

Let it be immediately insisted upon that the proper approach for a study of the Telephone company involves Telephone securities rather than Telephone telephones. The telephones are there, of course—15,500,000 of them—and the owner of a share of Telephone stock is, from one standpoint, the owner of a fraction less than one telephone and its accessory plant. Neither have we the slightest intention of writing an A. T. & T. market letter and discussing at what figure one should make one's commitments and at what figure one should unmake them. It is the paradox, a financial curiosity and a sociological fundamental, with which we are concerned. Put in its simplest terms, the paradox is this: Wall Street likes the stock for a particular reason which the company says is absolutely invalid. Wall Street says that present earnings of A. T. & T. would permit a higher dividend or that, at any rate, future earnings will ultimately necessitate a larger return to stockholders. The company says this simply is not so.

There can be no question of the sincerity of the company. It is committed to a policy of distributing excess profits not to stockholders in cash but to its public in service—a policy expressed time and again, most officially by President Walter Sherman Gifford, who said in 1927 at Dallas, Texas:

> It . . . would be contrary to sound policy for the management to earn speculative or large profits for distribution as "melons" or extra dividends. On the other hand, payments to stockholders limited to reasonable regular dividends with their right, as the business requires new money from time to

time, to make further investments on favorable terms, are to the interest both of the telephone users and of the stockholders.

Earnings must be sufficient to assure the best possible telephone service at all times and to assure the continued financial integrity of the business . . . Earnings in excess of these requirements must either be spent for the enlargement and improvement of the service furnished or the rates charged for the service must be reduced. This is fundamental in the policy of the management.

Note well the word "earnings." Mr. Gifford is dealing with fundamentals, not details. He pledges his company not to increase its earnings beyond the point of fair returns to stockholders, which point he considers already reached. Beyond a "fair return" Mr. Gifford pledges all profits to the public, *not* to the stockholders. In March, 1928, Mr. Gifford wrote his 1927 report to stockholders and repeated, almost in the same words, the gist of his Dallas message. And an official of the company, speaking at a Bell System conference in October, 1928, followed Mr. Gifford's platform through to its logical implication with the statement that:

The emphasis we place is not upon giving the last possible cent to the stockholder as soon as we can get it to him . . . A lawyer once phrased it that in the Bell System the public was the residuary legatee of all benefits, whereas in most businesses the stockholder was the residuary legatee of all benefits. That is an accurate description of our motives.

Now it is true that nearly all corporations—and particularly large corporations—are likely to mention their duties to their public, and it is especially true that a utility—and a very monopolistic utility—would be more than likely to make pronouncements concerning its social responsibility. But the flat statement that the public and not the stockholder is the "residuary legatee of all benefits" attacks the theory of private management in that theory's most tender portion. What is the function of a company's management, if it is not to make as much money as possible (and as soon as possible) for the stockholders? Who owns the company, including its excess profits, if not the stockholders? Wall Street values a stock in terms of earnings per share, more or less regardless of dividends per share. Wall Street always considers undistributed earnings as a barrel that will some day be tapped for the benefit of the corporate family. How, then, can the securities of a company which runs flatly counter to this investing tradition be more popular than the securities of companies which exhibit a whole-hearted devotion to split stock and extra dividends? According to the policy of the Telephone management, A. T. & T. common is essentially to be regarded not as a common stock, but as a bond with a high yield or as a preferred stock with a good yield. Yet during a period in which the investing public was extraordinarily common-stock minded (and with a strong bias toward common stocks in their more speculative aspects) Telephone stock rode buoyantly along on the wave of market inflation and was purchased by many an investor at prices which left him a return on his investment of approximately 3 per cent. Here, then, is a double contradiction. A privately owned corporation announces that its primary allegiance belongs to the people who buy its service instead of to the people who buy its stock. And after making—and reiterating—this announcement, it easily retains its position as the corporation with the most widely distributed securities in the world, its stockholders numbering more than 500,000, including a large portion of the investment trusts and capitalists of the U. S.

BELL SYSTEM

Age.—June 2, 1875, fifty-five years ago, the first telephone conversation over electric wire took place between Alexander Graham Bell and Thomas A. Watson. In 1877 Somerville and Boston were connected by one telephone wire.

Most critical age.—Not until litigation with Western Union, culminating in the famous settlement of 1879, was the patent protection of the Bell System assured. This made it possible for the American telephone system to develop monopolistically.

Present fortune. — Assets — $4,250,000,000; debts—$1,250,000,000; reserves—$1,000,000,000; net worth—$2,000,000,000.

Present income.—

Receipts	$1,115,000,000
Expenses	838,000,000
Interest	60,000,000
Profit	217,000,000

Source of income.—15,500,000 phones owned; 4,500,000 phones connecting in this country. Dividends from Western Electric and investments in Canada and in certain connecting companies.

Offspring.—(1) Western Electric Company with total sales of $411,000,000 in 1929, profits on these sales of $27,000,000.

(2) International Western Electric, to the loss of which the parent Western Electric was reconciled in 1925 through a payment of some $30,000,000 by its near cousin, International Telephone and Telegraph.

(3) Electrical Research Products organized in 1926 for participation in sound and radio developments.

(4) Graybar Electric Company, wholly owned subsidiary of Western Electric Company, largely non-telephone equipment, sold in 1928 to its employees.

Annoyance.—Rumors of stock split-ups, distribution of Western Electric and Electrical Research Products stock to its own stockholders.

Mature philosophy.—The public is the residuary legatee of all profits above a fair return to stockholders.

. . .

But before looking more closely into this apparently anomalous situation it is advisable to explain, briefly, what the American Telephone & Telegraph Co. is. No man has ever made more than a brief explanation. For one thing, a complete statement (besides defining electricity) would have to account for the 450,000 workers who spend their days and nights in Bell telephone service. Briefly, the Telephone company is a corporation lodged in its own conservatively impressive building on Broadway at Fulton. Just to the north, across Fulton Street, is St. Paul's Chapel, with its little cemetery which callous custom and obvious convenience have turned into a public park. If you are a Telephone man, your eyes are likely to travel farther afield and look toward West Street, where the ponderous tower of the New York Telephone Co. bulks up across a stretch of low buildings from which it rises like a medieval castle against the mean roofs of a village. Then you may realize that this building is only one example among thousands of telephone buildings throughout the country and that in this building and its companions more than 147,000 girls sit before switchboards and say "Thank You" nearly 70,000,000 times a day. Because only a fragment of the Telephone plant can be seen on any given occasion, it is difficult to visualize that plant as a unit. Yet if everything that the Telephone company calls *assets* were suddenly changed into gold, there would be three times as much of the precious metal as would result if everything that General Motors calls *assets* underwent the same Midas-like transformation. The Telephone business is the biggest business in the world. Almost the only comparison to it is that other and even more complete utility monopoly operated by the federal government and known as the U. S. Post Office.

In addition to being a giant, the Telephone company is an independent giant. It began life as a patent monopoly, like the Aluminum Co., and—also like the Aluminum Co.—might very well have come under the domination of one or another of its early backers. But there were no Mellons among the Bostonians who furnished its early capital, and except for an otherwise surprisingly large New England representation on its directorate, it has long outgrown its founders. Nor has any banking Jack climbed any financing bean-stalk to hew the giant down. The company has amicable relations with many bankers, including the House of Morgan, but no one has ever underwritten any of its stock issues and it sits under no golden thumb. In its formative stage in 1876 it tried to sell itself to Western Union, but the telegraph company (in what now appears as one of the major stupidities of modern economic history) did not think telephones worth $100,000 and so failed to make an investment which has now grown to be 42,000 times that. Even since that early day the Telephone company has stood on its own feet, and they have always grown bigger. Today with some 500,000 stockholders averaging about thirty shares each and not one holding more than seven-tenths of 1 per cent of the stock (largest holders are Sun Life Assurance and George Fisher Baker), the management of the company is responsible only to its board of directors, which is dominated by no bank, no *interest*, no controlling clique. It is important to remember this point in view of Mr. Gifford's resultant ability to practice what he preaches in the way of a fair return on invested funds.

And, finally, the Telephone company is nearly a monopoly. There are three major divisions in the telephone business. One is

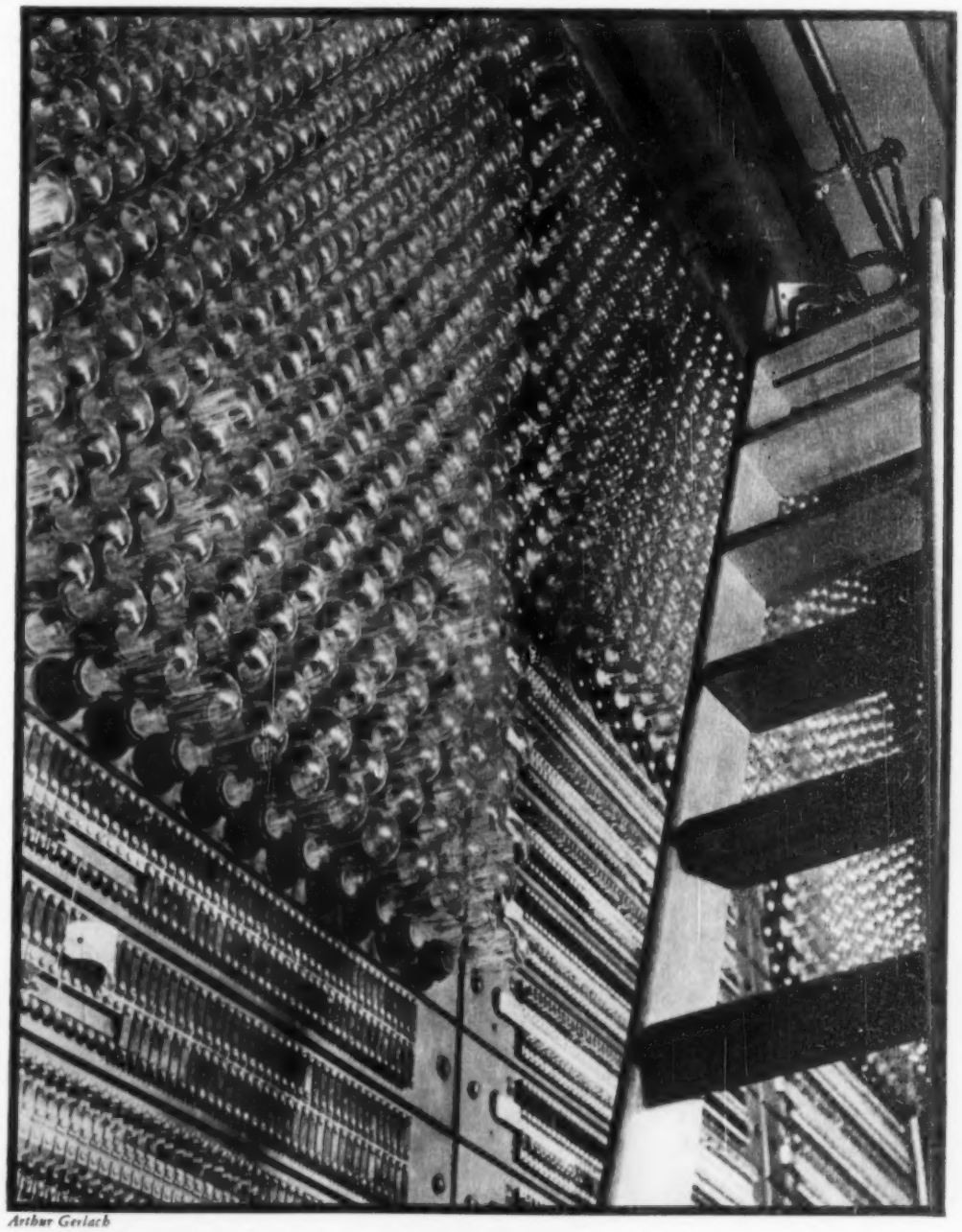
A. T. & T. One is the Bell System. One is Western Electric, Inc. To confuse them is possible but not excusable. A. T. & T. is partly a holding company, partly an operating company, partly an organization for research and for service. As an operating company, it operates the long lines. As a holding company, it owns approximately 93 per cent of the common stock of twenty-one operating telephone companies of the Bell System in the U. S. These companies are:

New England Telephone and Telegraph Company
Southern New England Telephone Company
New York Telephone Company
New Jersey Bell Telephone Company
Bell Telephone Company of Pennsylvania
Diamond State Telephone Company
Chesapeake and Potomac Telephone Company
Chesapeake and Potomac Telephone Co. of Baltimore City
Chesapeake and Potomac Telephone Co. of Virginia
Chesapeake and Potomac Telephone Co. of West Virginia
Southern Bell Telephone and Telegraph Company
Ohio Bell Telephone Company
Cincinnati and Suburban Bell Telephone Company
Michigan Bell Telephone Company
Indiana Bell Telephone Company
Wisconsin Telephone Company
Illinois Bell Telephone Company
Northwestern Bell Telephone Company
Southwestern Bell Telephone Company
Mountain States Telephone and Telegraph Company
Pacific Telephone and Telegraph Company

It owns a little less than one-third interest in the Bell Telephone Company of Canada and a half interest in the company owning the telephone cable from Key West to Cuba. The A. T. & T. also owns 98.3 per cent of the Western Electric Company, the manufacturing end of the Bell System, and the A. T. & T. and the Western Electric jointly own the Bell Telephone Laboratories, the research end of the Bell System.

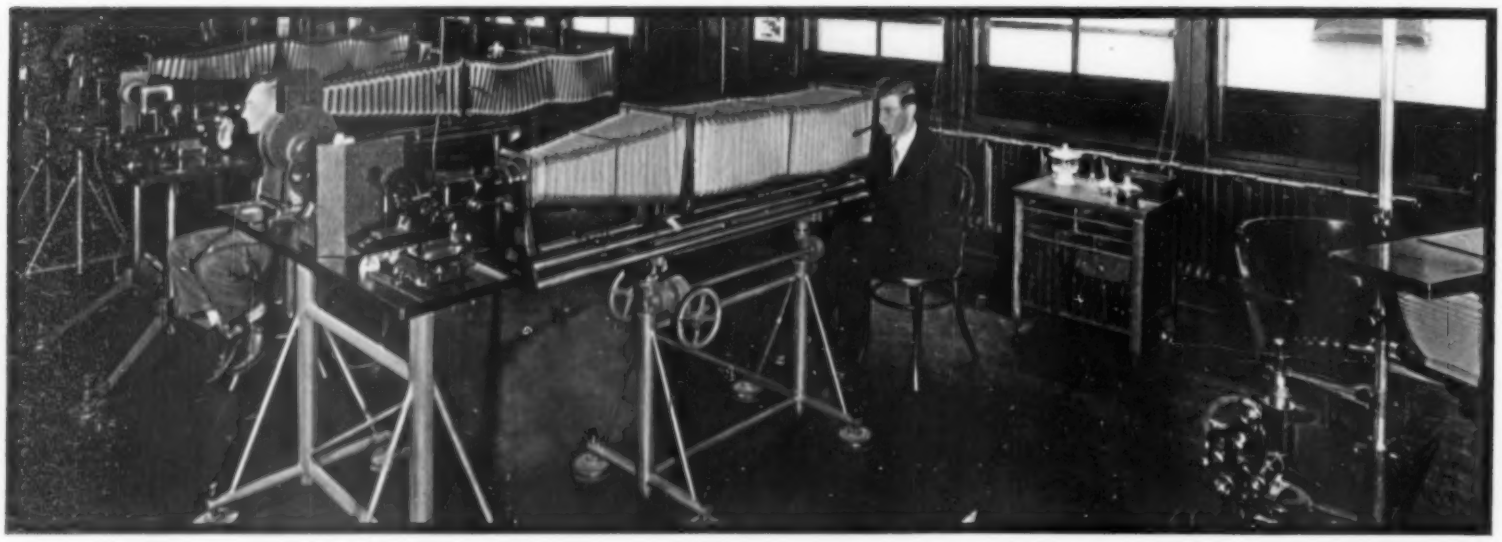
The people of the U. S. do their telephoning on 20,100,000 telephones. Of these instruments, 15,500,000 belong to the Bell System and are called Bell System telephones. There are 4,500,000 telephones belonging to *connecting* companies. A connecting company is a company which does not belong financially to the Bell System, but whose lines are connected to the Bell lines and whose subscribers depend upon Bell facilities for long-distance telephoning. The remaining 100,000 telephones belong to *competing* companies in which the Bell System has no financial interest and with which it has no physical connections. The Bell System therefore controls more than 75 per cent of U. S. telephones. Its percentage of the telephone business, however, is much higher. In the first place, it has most of the telephoning in the larger cities. In the second place, it has most of the long-distance (also of transoceanic) telephoning. The Bell System within the area it serves is essentially a monopoly and makes no bones about its position as such. On the other hand, it is not an unregulated monopoly. There are forty-five state public service commissions (all states except Texas, Delaware, and Iowa) and the Interstate Commerce Commission, all with jurisdiction over telephone rates. The rates charged by the various telephone companies are subject to the approval of these commissions except that should any commission impose a rate which the Telephone company should consider confiscatory, the Telephone company has the right to bring its case to the U. S. Supreme Court and there argue it on the confiscation basis. Because American industry is operated primarily on the theory that reasonable prices are guaranteed as the result of free competition between relative equals, an industry (such as the telephone industry) which is a natural monopoly and in which regulation must substitute for competition is inescapably regarded with a certain suspicion. The Telephone company on the whole enjoys a better popular reputation than the light and power utilities and a good deal better reputation than most of the transportation utilities. Yet the regulated position in which Mr. Gifford finds himself must always be kept in mind as one of the factors which contributes to his profit-making restraint.

Belonging 98.3 per cent to A. T. & T., but sponsoring no telephone conversations, is Western Electric, Inc., which attends to the manufacturing end of the telephone industry. It is obviously necessary that someone should make the telephones with which the nation's telephoning is done, and it is obviously advantageous for the company which uses the telephones to control the company which makes them. Because the Western Electric statements are not included in the consolidated reports of the Bell System, because Western Electric is a manufacturing company (and therefore not subject to utility commissions), and because Western Electric (through Electrical Research Products, a wholly-owned subsidiary) carries on a non-telephone business—chiefly the distribution



Arthur Gerlach

Detail of New York Telephone Co. equipment. These are resistance lamps and fuses which guard against damage from excess current.



of talking motion picture mechanisms—there is a strong tendency to regard Western Electric as the rabbit in the Telephone company's hat. Into this Western Electric *mystery* we shall inquire below; meanwhile it should be remembered that although Western Electric is certainly a very large company (probably few people realize that its annual sales are about the same as those of General Electric), the bulk of its business does lie in the manufacture of telephone equipment and about 90 per cent of its business is done with Bell companies. Operating telephone companies are not compelled to buy their instruments from Western Electric, but they do buy such instruments as a matter of usual practice. So do many of the connecting companies. If, therefore, Western Electric is regarded not as a side show or as a bypath, but as the vital and intimate manufacturing end of the telephone business, such an outlook cannot be accused of much astigmatism.

We have, then, the A. T. & T. as parent company, service and research organization, and financial headquarters of the telephone industry. We have the twenty-one operating companies and the A. T. & T. in its operating function (the long distance lines) as the operating division of the Bell System. And we have Western Electric as its manufacturing division. Such, in very broad outline, is the organization of what has already been noted as the world's greatest business.

. . .

Now since the purchaser of A. T. & T. stock has, for all practical purposes, purchased an interest in the Bell System as well, including Western Electric, he has unquestionably identified himself with the No. 1 corporation of the universe and is entitled to whatever sentimental overtones such an association may bring him. Remembering, however, the Telephone platform of *no extras*, let us become momentarily mathematical and see what the Telephone investor's return may be in actual dollars and cents. Suppose that the investor bought 100 shares of Telephone stock in July, 1930, and paid for it $220 a share. The regular dividend of the Telephone company is $9.00 a share. That dividend stood at $8.00 from 1906 until 1921. In the second quarter of 1921, when Telephone stock was having some difficulty in maintaining its par of $100, the dividend was raised to $9.00. Since the stock's 1930 low of 200 was 100 points above par, the par problem appears definitely to have disappeared, and with it the necessity for raising the $9.00 dividend, which therefore can be considered as the probable return for some years to come. Simple arithmetic demonstrates that $9.00 on $220 amounts to 4 per cent.

But, of course, Telephone stock is not a 4 per cent investment. Nearly all corporations from time to time offer to their stockholders opportunities to purchase new stock at a price considerably below the market. With the Telephone company such opportunities are a basic financing method and can be counted upon to recur at frequent intervals. In 1922, 1924, 1926, 1928, and 1930 holders of Telephone stock were offered additional stock at the par value of $100, which was anywhere from 25 to 100 points below market. The first two of these offerings were made on the basis that the stockholder could purchase one new share for each five shares already held, and the last three were made on the basis of one new share for each six shares already held. From an official A. T. & T. standpoint these subscription offerings were not at all in the nature of gifts, but they were

[*Continued on page 104*]

A. T. & T.'s Board of Directors

Comes regularly from Boston and elsewhere to meet the maker of the Dallas speech. Three major traditions.

THE outstanding characteristic of a director is that he does not direct. He represents. He may represent, individually, stock ownership or financial backing or management or general respectability or what not. But taking him and his fellows together as a unit—as a board—he represents the character of his corporation. He is partly a mirror in which the corporate character may be reflected to the general eye. But like the sundial that numbers only happy hours, he must also be a mirror that reflects only a true picture. He must guarantee as well as illustrate the integrity of his corporation. The standing of any business can be only as high as the calibre of its directorate. The presence of a Kuhn, Loeb partner on the board of Paramount, for instance, is as indicative as the absence of a great financial name on the board of the old Fox Films. A company is known by the directorate it keeps.

And the directorate of the Telephone company does excellently hold up the mirror to the Telephone nature. It includes a strong representation from the New England group by whom the company was originally founded. It includes an excellent selection from our more notable financial intelligences. And—as a great utility should—it includes a very marked percentage of public service coupled with a noticeable leaning toward what might be termed an aristocratic liberalism. These qualities are, of course, not mutually exclusive, and the Telephone directors are not to be labeled in precise and water-tight compartments. As a group, however, they do suggest the mingling of three major traditions—a New England tradition of family, a Wall Street tradition of finance, and a public service tradition compounded partly of war-time service and partly of Wilsonian democracy.

© *Keystone*

GEORGE F. BAKER SR.

Keystone

WALTER SHERMAN GIFFORD

Underwood & Underwood

GEORGE F. BAKER JR.

Among the New Englanders, William Cameron Forbes is perhaps most typical. His father was Colonel William Hathaway Forbes, president of the National Bell Telephone Co., A. T. & T. predecessor. His mother was Edith Emerson, daughter of Ralph Waldo Emerson. Among his Harvard classmates (1892) were Thomas Lamont, Morgan partner; Arthur Woods, one-time N. Y. Police Commissioner; Jeremiah Smith Jr., fellow Telephone director and one-time financial savior of Hungary. Among his friends are Edwin Sibley Webster, of Stone & Webster; Fred Rice, of Rice & Hutchins (shoes); Harold Keith, of Walkover (shoes); H. Wendell Endicott, of Endicott-Johnson (shoes); Bradley Palmer, of United Fruit. At Naushon, off the Massachusetts coast, he has an island empire [FORTUNE, February, 1930]. He served in the Philippines under William Howard Taft, was Governor-General of the islands from 1909 to 1913, and here represents no liberal tradition. As Philippine mementos, however, he cherishes a dagger presented him by Aguinaldo and a sort of plaque (also a presentation) constituting a map of the Philippine region in which the ocean is made of silver, the islands are made of gold, and the civic improvements of his administration are picked out in glittering jewels. At sixty Mr. Forbes is active at yachting, at shooting, and at polo (he has a private field on his Westwood, Massachusetts, estate). This summer, however, he has again traveled far to the East on his country's business, for President Hoover appointed him Ambassador to Japan, and he left for Tokyo in August.

Another director partly by inheritance is Philip Stockton, whose father, Howard S. Stockton, was Bell president from 1887 to 1889. Yet Mr. Stockton's position could not be considered purely dynastic. In his own right he is one of New England's two or three most able bankers, was for many years president of the Old Colony Trust Company. When Old Colony and First National (directed by Daniel Gould Wing, New England's outstanding banker) were combined, Mr. Stockton became president (Mr. Wing remaining chairman of the board) of the

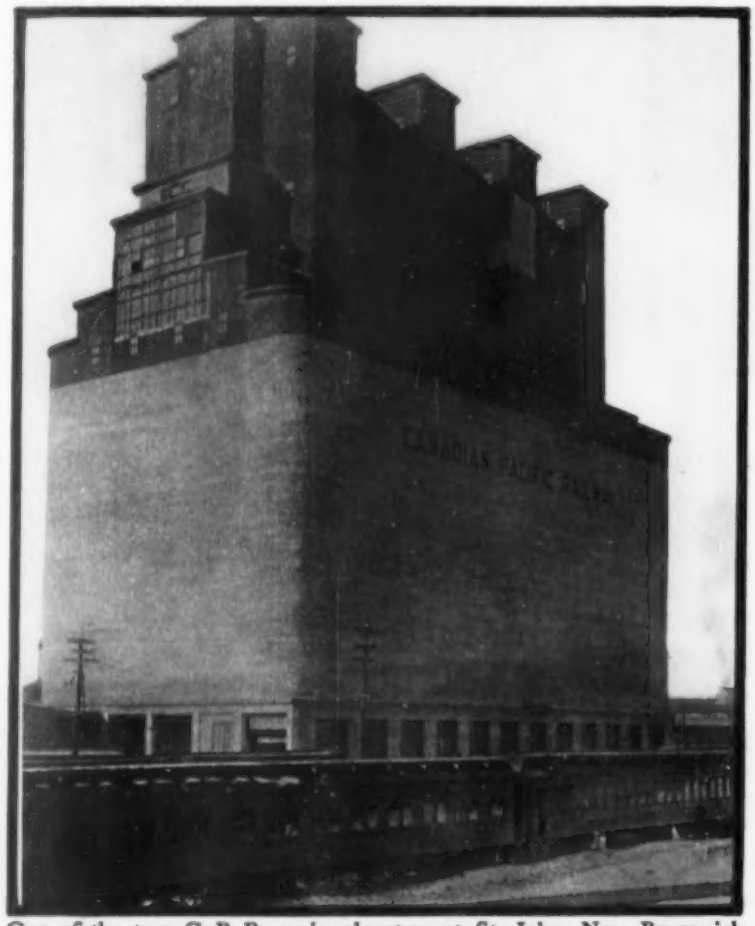
[*Continued on page 93*]

Canadian Pacific Railway

Sometimes called Sacred Cow of Canada. Premier creator of its own traffic. World's greatest grain-carrier and near-greatest shipmaster, hotel-keeper, realtor, miner, farmer, lumberman. Assets: $1,399,000,000.

WHEN in 1881—half a century ago—the contract for the construction of the Canadian Pacific Railway was signed, the Dominion of Canada was strictly a geographical expression. From the basin of the Great Lakes to the Pacific its southern boundary was formed by a straight line slightly below the forty-ninth parallel, an imaginary line laid down with that splendid disregard for the facts of economics, commerce, and military strategy which the boundary decisions of the frontier period alone could achieve. The administrators at Ottawa had to travel to Winnipeg by way of Chicago and to British Columbia by way of the new American transcontinental railways—if not by way of Cape Horn. A fairly compact population group in the lower Lakes basin looked westward down a long, unnatural corridor to see only a handful of farmers about Winnipeg and another handful of trappers and gold miners at the extreme western end and beyond the impassable barrier of the Rockies. The rest was practically uninhabited, and both handfuls would inevitably drift into the economic and ultimately the political orbit of the U. S. unless the natural channels of trade could be re-oriented across forty degrees of longitude.

The Canadian Pacific Railway was the bold and more or less conscious answer to that singular problem. The problem was at once more difficult, more artificial, than that which confronted the railway builders of the U. S.; it was also to carry with it an opportunity in many respects unique. The result is the modern Canadian Pacific Railway system—"C. P. R.," an organization so firmly embedded in the national life and built to so heroic a scale as to be known everywhere simply by its initials. Designed to cut a trade channel across forty degrees of longitude, it now reaches in a single compacted transportation system around 240 degrees, or two-thirds of the earth's circumference. It owns or operates more than 15,000 miles of track in Canada and controls 5,000 more in the U. S.—a mileage far beyond any U. S. railroad. A fleet of transoceanic steamers in the Pacific, another in the Atlantic, and other fleets on the Lakes and on coastal waterways fly its house flag—sixty-eight vessels (with two building), in all with a tonnage of 511,418. It owns 4,685,000 acres in farms, town sites, and timberlands with gas, petroleum, and mineral rights. It has built a great irrigation system; it controls the second largest mining company in Canada (Consolidated Mining & Smelting, of whose stock it owns approximately 49 per cent); it has spread a chain of its own transient and tourist hotels through the Dominion; it conducts its own express system and its own telegraph lines; it operates its own sleeping and dining cars, while its system of developing traffic—encouraging immigration, placing settlers, assisting in the establishment of industries along its lines—has been brought to an elaboration and perfection no longer possible under the different conditions in the U. S. Its entry into the field of aviation has just been announced. Finally, it pays 10 per cent on its common—its profits derived 7 per cent from its railway operations and 3 per cent from the "Special Income Account" coming from non-railroad operations and investments—and it lists its assets, with marked conservatism, for the year ending December 31, 1929, at $1,339,000,000.



One of the two C. P. R. grain elevators at St. John, New Brunswick (total capacity: 1,700,000 bushels). Another at Port McNicholl has a capacity of 6,500,000 bushels.

C. P. R. is, to a degree peculiar for a private enterprise, a national institution. In 1880 Canada was geographically and economically invertebrate; C. P. R. supplied the Dominion with an artificial backbone, and the interrelationship between the company and the country could not be other than profound. Its pay rolls list about 90,000 names, and it spends about $508,000 daily on wages, supplies, and taxes. What that means in a nation of only some 10,000,000 souls is not difficult to imagine. The accompanying illustrations give some idea in concrete terms of this vast and picturesque apparatus of modern commerce; they imply what it must mean in the subtler values of a nation's life. Canada is a country organized upon an export basis; she is primarily an agricultural exporting country and wheat is her first agricultural export. Varied though her activities have become, in a real sense she lives upon the great river of wheat poured down every summer and fall from the prairies of her western provinces to tidewater at Montreal or Vancouver. C. P. R. had a major rôle in the creation of that stream, in channeling it, developing it, and delivering it through the fascinating intricacies of the grain trade to the markets of the world. It is the world's greatest grain carrier;

Perhaps the ugliest spot in British Columbia, Trail is also one of the wealthiest, for it is the home of Consolidated Mining & Smelting, the C. P. R.'s famous investment in a great Canadian industry, of which the C. P. R.-held stock has a market value of more than $50,000,000.

in its record year of 1928 it moved the enormous total of approximately 395,000,000 bushels of grain and 13,000,000 barrels of flour—one-tenth of the total world production of wheat in that year.

The significance of such figures in normal years can better be grasped from the consequences of bad years. Last fall and winter the golden river abruptly dried up. World surpluses and marketing difficulties dislocated Canada's wheat export trade; her grain exports in 1929 were only three-fifths of those in 1928, while the grain exports from the port of Montreal were about cut in half. The return flow of manufactured goods and supplies normally carried back to the prairies over the C. P. R. rails naturally dried up likewise. The railroad's gross for the big months of October and November was cut by approximately one-third, and rigid retrenchment became necessary. The effects were naturally felt from one end of Canada to the other. Lack of work in the great Angus Shops at Montreal aggravated the unemployment problem in the eastern cities. Though no regular service on branch lines was cut down, the freight haul was greatly decreased through lack of wheat movement. All of which was reflected last month by the ousting of the Liberal Party after ten years of political power.

With such an intimate rôle in the national economy, the distribution of the road's stock ownership is worth analyzing since it reveals the enormous stake of foreign capital without influence or control. Only about 18 per cent of the C. P. R. common (approximately 13 per cent of the common and preferred combined) is held in Canada. The road was, of course, built with outside capital, since fifty years ago Canada was a nation yet awaiting development, and as late as 1921 the United Kingdom holdings still amounted to approximately 46 per cent of the common. In subsequent years American investors bought heavily from English and other foreign holders, and the distribution as of December, 1929, was as follows:

	Common	*Preference*	*Combined*
U. K.	42.90	97.84	58.63
U. S.	32.68	.64	23.50
Canada	18.07	.29	12.98
Other	6.35	1.23	4.89

Canadians are, however, manifesting a tendency to increase their C. P. R. holdings, while the management of the road is and always has been thoroughly Canadian in its interests and outlook. The long, silent corridors of the gray Windsor Street Station in Montreal hold the nerve centers of the great system; from the beginning C. P. R. was a national undertaking, untroubled by those ills of absentee control which the Dominion learned to regret from its experiences with its eastern railways. In recent years, of course, the creation of the C. N. R. system, paralleling the C. P. R. and built, so far as railroad mileage and operation goes, to a somewhat larger scale, has deprived the older institution of the unchallenged primacy which it once held in Canadian life. But it is not straining metaphor to see the red boxcars of the C. P. R., moving in their long trains back and forth across the arteries which its rails provided, as corpuscles in the blood stream of a nation. And it was as a matter of fact not only to provide life to a nation but actually to create one that C. P. R. was built. Queen Victoria, addressing Parliament in 1885, expressed the pious wish that

[*Continued on page 46*]

British Columbia

¶ Off Canadian seashores last year were caught 1,024,221,000 pounds of fish valued at $26,176,350, of which many, of course, come from British Columbia.

Canadian Pacific

The coast line is an exaggeration of Norway's. There is a $500 per capita tax on immigrating male Chinese ($1,000 on female Chinese), but there is much cheap Chinese labor. There is no longer a thriving fur seal industry. There is much profitable mining of lead and copper and gold and silver. And approximately 700,000 cases of forty-eight one-pound tins of salmon are canned yearly.

Alberta

¶ Here Banff, famed resort; Kipling's Medicine Hat, the "city that was born lucky." As in most of Canada, there is much excellent fishing and shooting.

Publishers Photo Service

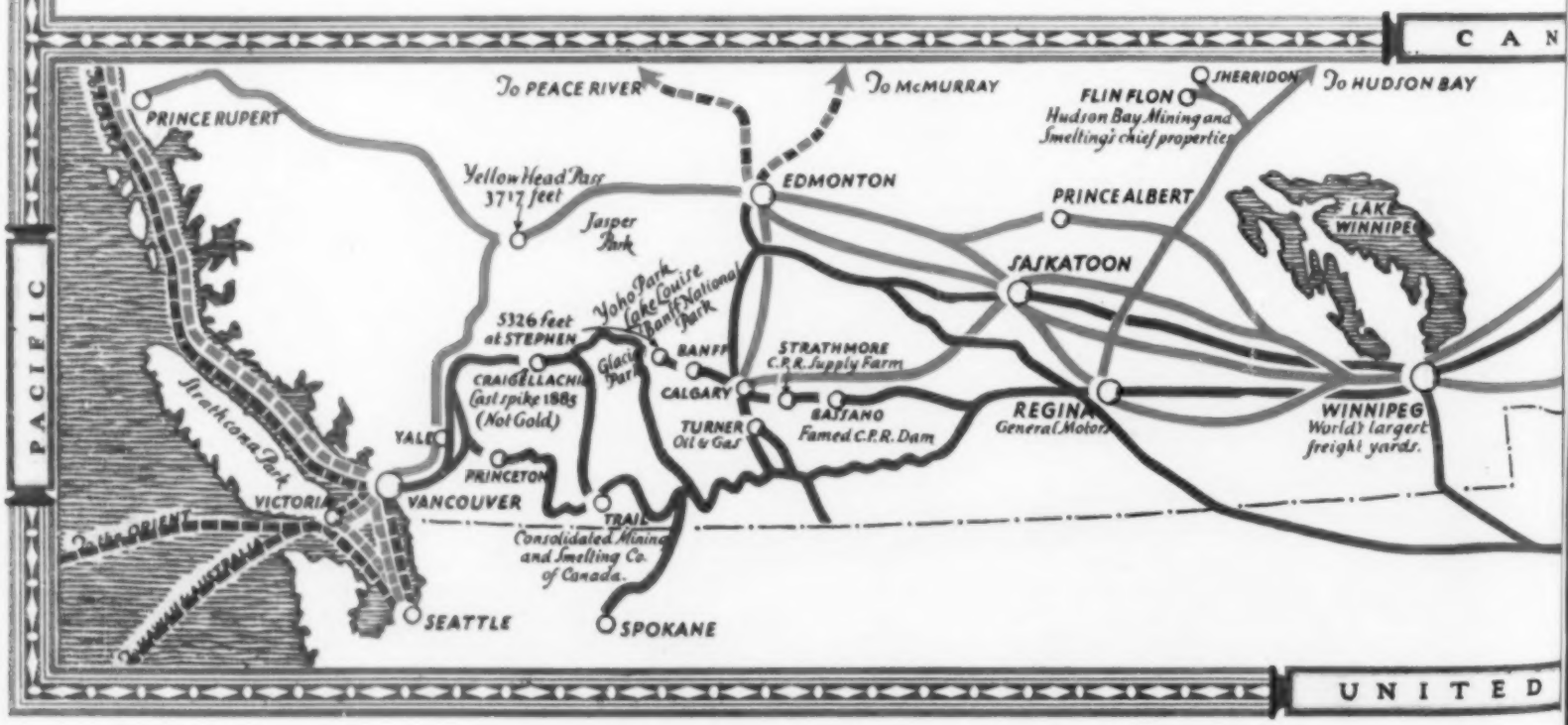
Here are many touted totem poles though most are in British Columbia. And vast coal mines and oil and natural gas. And beet sugar fields in Raymond. And an irrigated area larger than that in California or Colorado. Albertans are proud that they used 18,845,900,000 cubic feet of natural gas last year. They do not often mention the 45,000,000,000 cubic feet which were wasted.

Saskatchewan

¶ Here yet lingers much old-world formality. One sees top hats and occasionally frock coats on Sundays. Also one sees Doukhoborsti (Russian Quakers).

Canadian Nat'l Rys.

Center of the three prairie provinces, Saskatchewan is most prairian and leads Canada in production of wheat. There are clay and coal, but little has been done about it. Between 1911 and 1921, the population of Saskatchewan almost doubled. But according to most recent statistics, it is now only 821,042. The Saskatchewan is the best-known river, but there is also the Qu' Appelle.



Manitoba

¶ The name Manitoba comes from two words, *Manito*, Great Spirit, and *Waba*, narrows of a lake. But by metonymy the name now means God's Voice.

Publishers Photo Service

Manitoba also means strawberries and raspberries, cherries and plums. It means 22,000,000 pounds yearly of butter, over $14,000,000 worth yearly of dairy goods, record oats, prize winning steers. Winnipeg is Canada's greatest grain distributing point. The Winnipeg River, more than 200 miles long, could, if urged, provide much excellent water power. Here settled a devout sect of Russian Mennonites.

Ontario

¶ Here Niagara Falls, universities, and colleges (Toronto, Victoria, McMaster, Trinity, Queens, Western, Ottawa). Here bootleggers, honeymooners.

Ewing Galloway

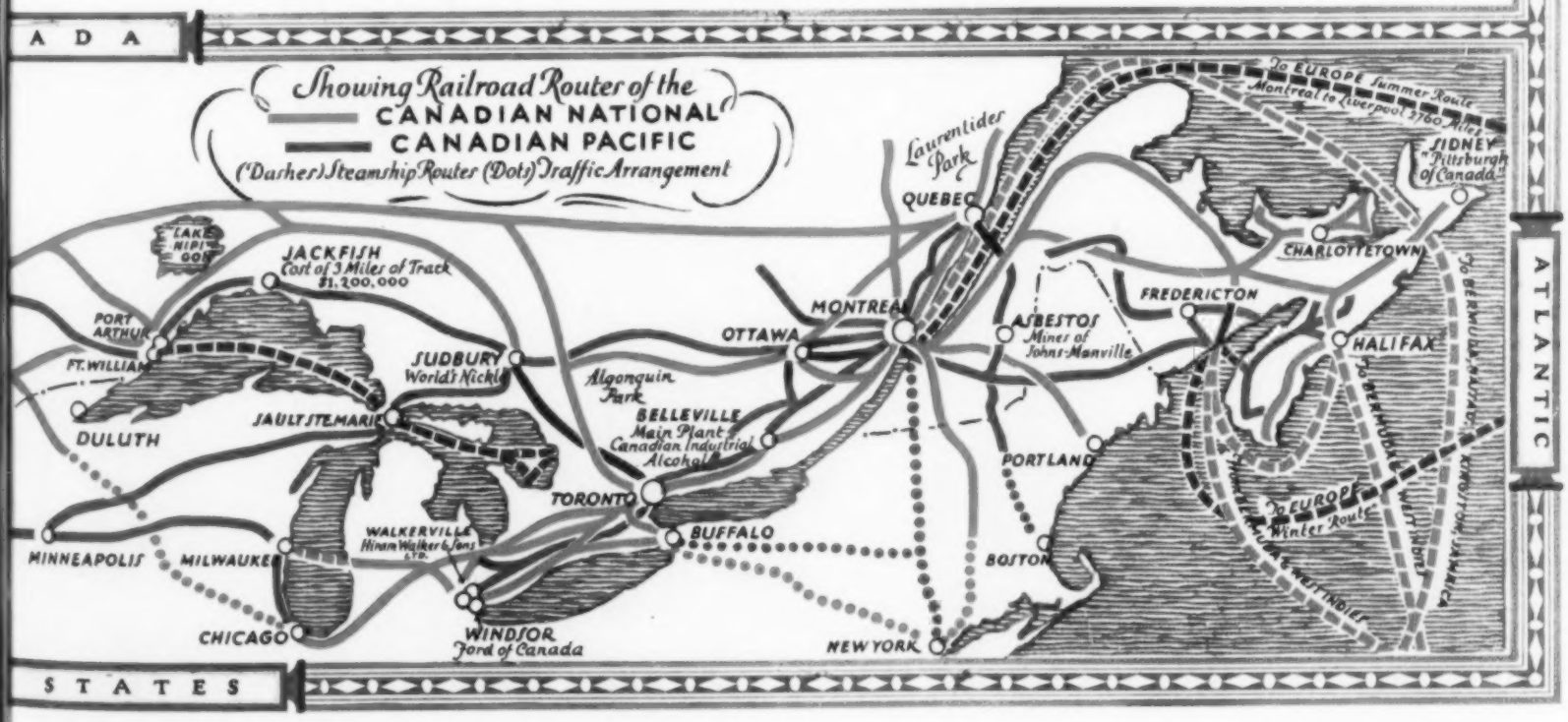
Canada is not greatly industrialized, but Ontario is its most industrialized province. Nine-tenths of its people live on one-tenth of its area. One-half of Canada's orchards (apples, peaches) are here. There is little coal but much hydroelectricity. The Royal York at Toronto is the largest hotel in the British Empire. The province leads Canada in agricultural production. The province women greatly dislike the U. S.

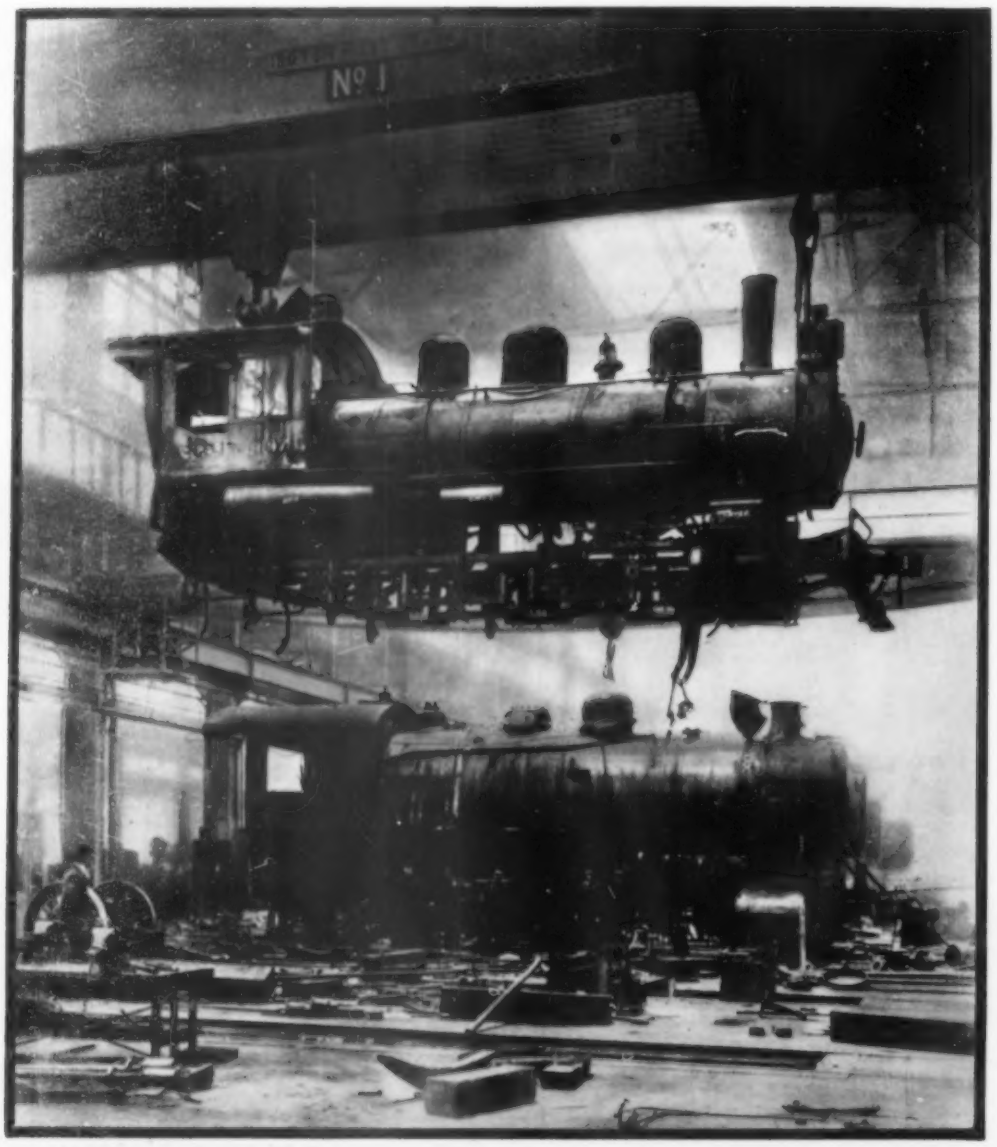
Quebec

¶ Here atmosphere: Notre Dame des Victoires, Ursulines, Wolfe and Montcalm, crooked streets, the monument to first farmer Louis Hébert.

Canadian Nat'l Rys.

And in Quebec is a mill which the Anglo-Canadian Pulp & Paper Mills claims is the most modern in the world. There are also asbestos and mica and a Johns-Manville plant at Asbestos. Last year's $45,000,000 mining production was 22 per cent better than that of 1928. The City of Quebec is the New York of Canada as Ottawa is its Washington. But best known to U. S. citizens is Montreal.





THREE LOCOMOTIVES AND THE C. P. R.'S DRIVING FORCE

In Montreal, the C. P. R.'s Angus Shops build any type of rolling stock and, as above, rebuild it later. In the lower picture, Chairman E. W. Beatty (third from left) stands by one of the newer engines which C. P. R. needs now more than ever to compete with its rival, the C. N. R.

"my Dominions in North America may be ultimately peopled in an unbroken chain from the Atlantic to the Pacific." Actually what is now British Columbia was seriously considering joining with the U. S. It was necessary to promise a transcontinental railroad before British Columbia would agree to join the Dominion of Canada. The promise was given. But the fulfillment was by no means easy. The Canadian Rockies were impassable except by the most difficult trails. East of the Rockies there was a stretch of empty but fertile prairie; between the Winnipeg area and the older provinces there lay another empty stretch—the region along the north shore of Lake Superior, not only empty but riddled with rock ranges, countless small lakes, and swamps. Not only was it physically difficult to span Canada, but also there was no economic justification for building a railroad. In the Northwest, which now was linked to the Atlantic, there were exactly 165,000 persons. For whom, since it was they who had really insisted upon the railroad, the Canadian Government gave to the C. P. R. 25,000,000 acres of land and $25,000,000 in cash. And for whom, since this, of course, proved not enough, the C. P. R. had to borrow $22,500,000 more, and when this was used up, float a stock issue of $35,000,000 with the Barings in London.

In time, the C. P. R. was built, with what political difficulties, with what financial struggles and lavish dynamiting of the seemingly hopeless passes, with what industrial heroisms, faiths, and deaths, it need not concern us here. The year 1885 saw the completed road; Lord George Mount Stephen was president; the gloomy Illinois-born William Cornelius Van Horne, who was later to become president, was the executive responsible for the actual building. And it remained for him to justify by profits the road he built. He was aware that there was little trade for his road, but he was willing to create it. He had no time for heroics (his last spike was iron, not gold. "And anyone who wants to see it driven," he remarked, "will have to pay full fare"), and he realized that the building of the C. P. R. was only the preface to the story which the C. P. R. must tell. Accordingly when on July 4, 1886, the first through train reached Port Moody and the Pacific, a cargo of tea was on its way from Yokohama to meet it. And that cargo (for which Van Horne had, of course, arranged) was duly transported back east on the first through train which made *that* trip. If Canada were not yet prepared to supply trade sufficient unto the C. P. R., Japan and China would. By 1887 the C. P. R. had three chartered steamers doing a regular trans-Pacific run from Vancouver, and C. P. R. agents in the Orient and Australia were drumming the trade which was to pay for those costly miles over the Rockies. The great white fleet of C. P. R. ships hereinbefore mentioned thus was launched.

But there remained the trade of Canada itself. Van Horne busied himself with that too. He faced a period of depression and low prices that had set in after the crop failure of

1882. He faced three prairie provinces scantily populated. One of his first resources was to bring American cattlemen across the border to graze their stock on his prairies; he also launched an advertising campaign in eastern Canada—at the time striking in the originality of its copy—to produce immigration. A feeling that his wheat farmers were being victimized by thirty-five cent wheat led him to go into the market and buy wheat for fifty cents. It flooded his platforms and left him struggling with a car shortage, but when hostile interests circulated photographs of his congested terminals to prove C. P. R. inefficiency Van Horne bought up the pictures and spread them broadcast to demonstrate the amazing productivity of the Canadian Northwest. Thus did Van Horne justify his railroad by building the country through which geographically but with no economic reason it ran. When he retired into a knighthood in 1899, C. P. R. stock was almost at par, the company's sales from its 25,000,000 acres of land were proving a source of revenue. It was somewhat putting the cart before the horse, a little like hitting a man and finding the reason afterwards. In pure logic there should first have been a nation, then a railroad. The C. P. R. reversed the process. And to this day the C. P. R. continues its policy of selling land, of encouraging immigration, facilitating tourism by building its own hotels. When Van Horne's successor, Lord Shaughnessy, lay dying he was said to have remarked to *his* successor, the Canada-born Edward Wentworth Beatty, "Take good care of the Canadian Pacific Railway. It is a great Canadian property and a great Canadian enterprise." He might have said, "Take good care of Canada. It is a great country." Mr. Beatty, the erstwhile lawyer, always well dressed, always the athlete (he avoids golf, however, as involving repression), obeyed the command.

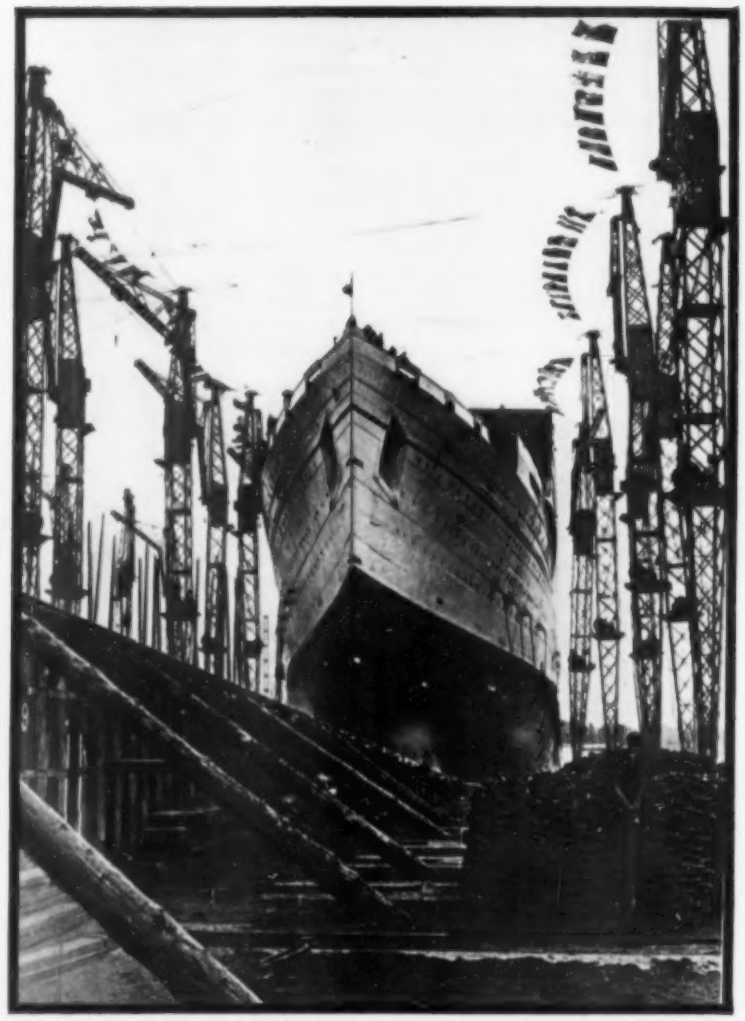
It is manifestly impossible for C. P. R. books, no matter how kept, to give at any one time an accurate mirror of the worth of the company. Agricultural land values rise and fall, mortgages are paid off or have to be foreclosed, coal lands and natural gas fields have a present or potential value based on trends of industry and population, fluctuating from year to year. Real estate values in a hundred communities and town sites rise and fall. Mining activity, the price of metals, the value of stumpage, the price per

[*Continued on page 144*]

Cathedral Mountain shines in a dark frame as a westbound train enters the first spiral tunnel about five miles northeast of Field, B. C.

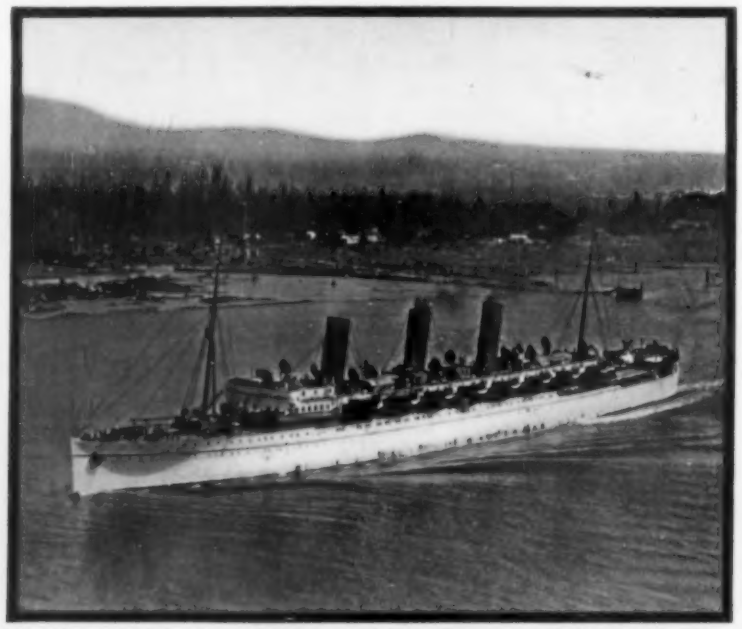
The Connaught Tunnel under Mount Macdonald, B. C., cost the C. P. R. almost $10,000,000, but it lowered the road's summit some 552 feet and reduced track curvature by an amount corresponding to seven complete circles. It is double-tracked for the entire five miles.

In 1928, Pat, the gray and black cat, walked onto the *Empress of Australia* and has stayed there ever since (except for one brief excursion on the wharves of New York). The *Empress of Australia* was most heard of in 1923 when she did relief work for the Japanese earthquake.

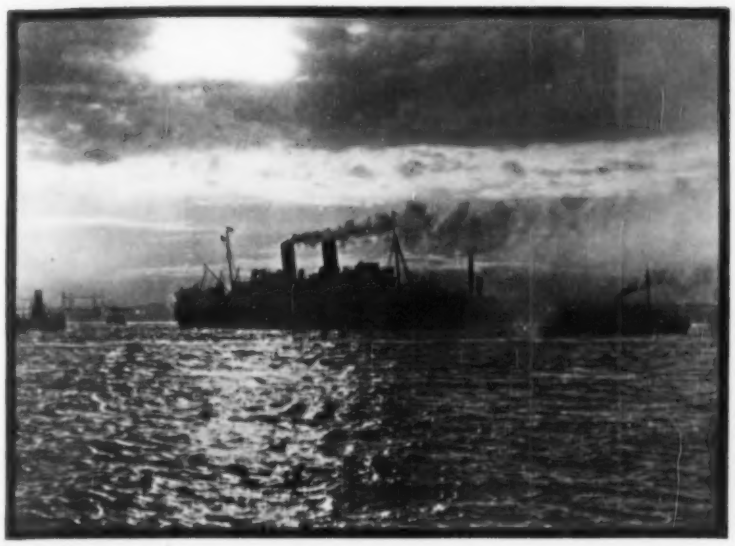


The *Empress of Britain* will be, when in service (1931), the largest ship plying between Canada and the Continent. Her decorations were done by such men as Sir John Lavery and Edmond Dulac. The Prince of Wales launched her, and Princess Mary was the first woman to step on board.

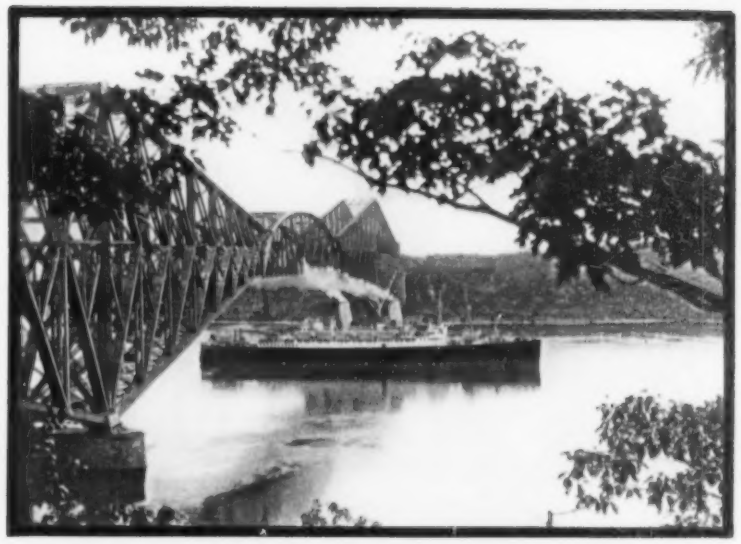
Fastest ship on the Pacific is the *Empress of Canada*. She once went from Yokohama to Victoria in eight days, ten hours, and fifty-three minutes—a record that still stands. First ship to enter Yokohama after the earthquake, she took many refugees back to Kobe and Shanghai.



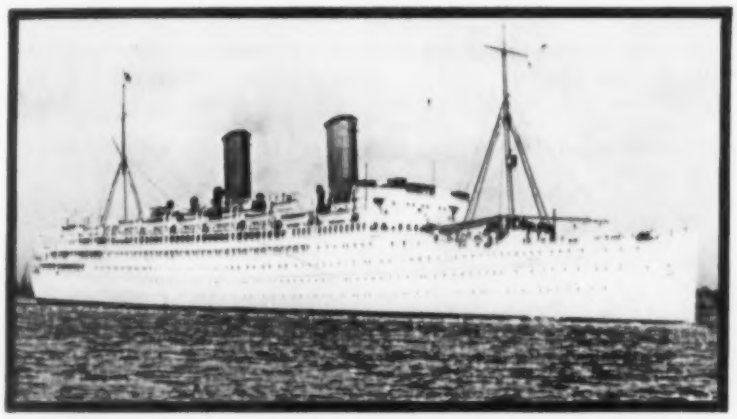
The *Empress of Russia*, outward bound from Vancouver, held Pacific speed records until the *Empress of Canada* arrived. She bears noble scars where guns were mounted during her War-time service in the Far East and India. She has never been to Russia.



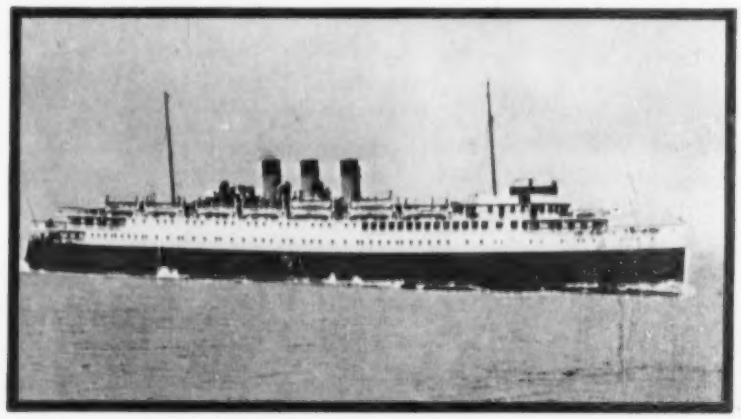
Sunset on the Clyde, mother of many ships, shows the *Duchess of Richmond* tugging at her anchor. Average tonnage of the Canadian Pacific fleet is 20,000 tons per ship. (The *Majestic*, by way of comparison, weighs 56,620 tons, the *Bremen* 51,655.)



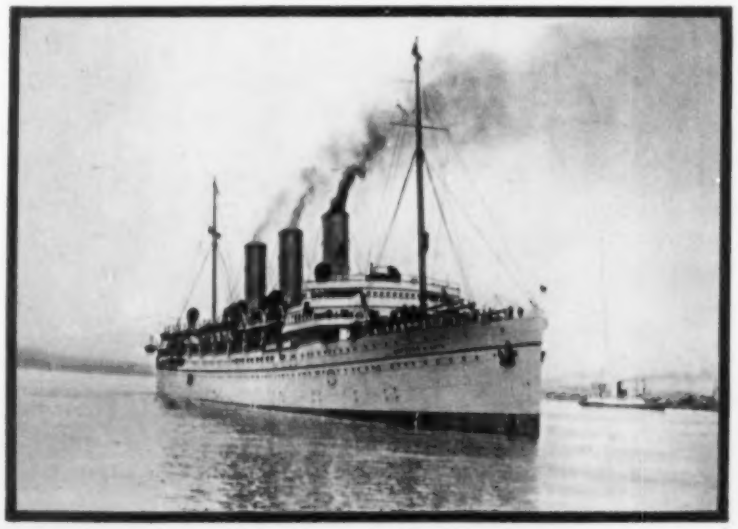
The *Duchess of Athol* has had only one fling. Once she took a trip to South America and Africa. But for that she has remained faithful to her Montreal course. She carries 1,400 passengers, which is little more than half of what the *Majestic* can carry.



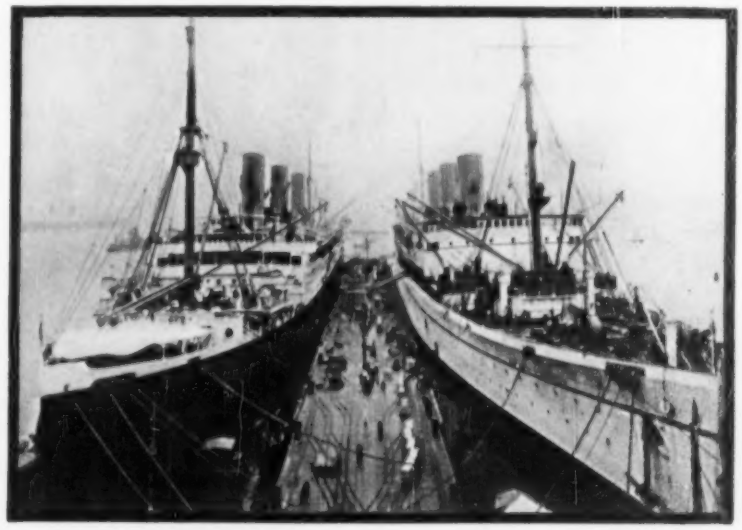
The *Empress of France*, once the *Alsatian* of the Allan Line, holds the speed record (five days, fourteen hours, fifteen minutes) between Cherbourg and Quebec. She is also the one-time flagship of the Tenth British Auxiliary Cruiser Squadron, and did service off South China.



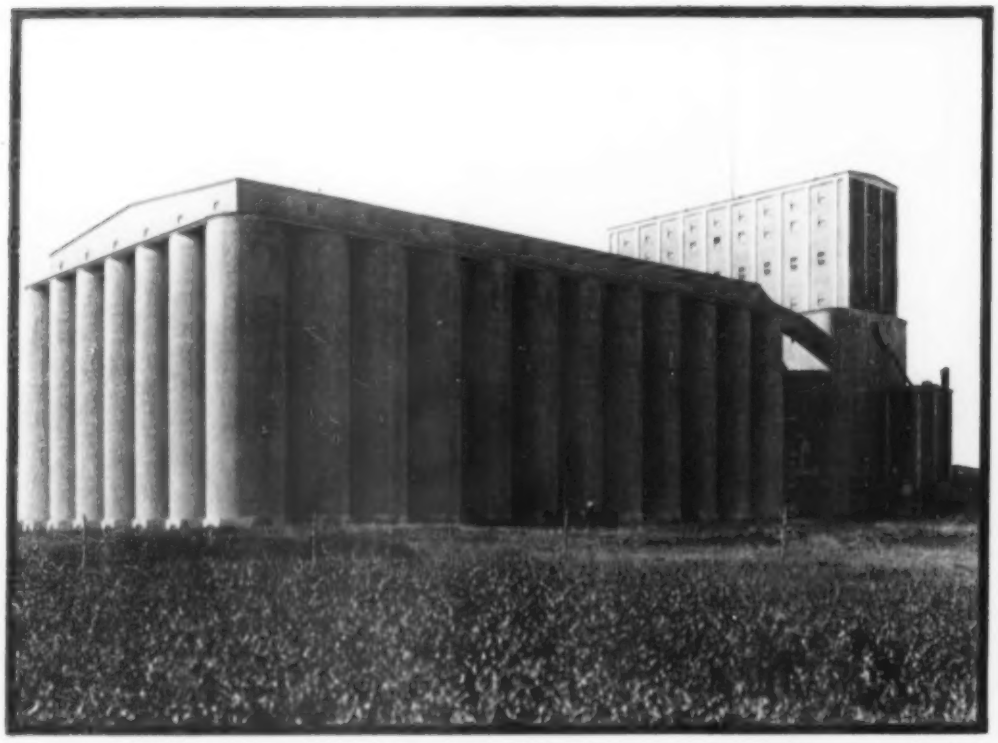
Added to the C. P. R. peerage are the *Princesses*. Above is shown the compact, speedy *Princess Joan*. Her sister ship, *Princess Norah*, is the newest of the C. P. R. line. Soon, however, there will be in service the C. P. R.'s newest and greatest—the *Empress of Britain*.



The *Empress of Asia* (shown above) like her sister ship, the *Empress of Russia*, did War-time service. Alike in exteriors, the peace-time appointments of their various salons and lounges are nevertheless different. But their ballrooms are identical.



At Kowloon, China, the *Empress of Canada* and the *Empress of Australia*. There are fifty-four C. P. R. ships on the Atlantic and Pacific and fourteen on the rivers and Great Lakes. The C. N. R. has ten ships and two which are now a-building.



In the above government-owned grain elevator at Saskatchewan may be stored 3,500,000 bushels of wheat.

Police guard the advance of new C. P. R. lines into a grain district.

Ewing Galloway

Founded by the C. P. R., the Port of Vancouver is Canada's largest outlet to the Pacific.

Sir Henry Thornton

Of the Canadian National Railways Co.

Underwood & Underwood
SIR HENRY THORNTON

IN OTTAWA, carefully locked away, there reposes a single certificate of stock. It represents the entire common issue of the Canadian National Railways Co.: ownership of 23,000 miles of railroad, a hotel chain, a steamship fleet, an express company, a telegraph company. Theoretically, King George owns the certificate. Less theoretically, it has 10,000,000 owners, the citizens of Canada.

If the ownership of C. N. R. seems vague, so does its value. For should the King or his Canadians attempt to market their share, it would be difficult if not impossible to find a buyer. The C. N. R. has just started the long journey which does not always lead to prosperity and stability. The C. N. R. is not, like the Canadian Pacific, a giant corporation which has become an institution, even a religion, to some men. The history of C. N. R. is in the future. The company compels attention simply because it is a new dynamic force in Canada and is a process at work.

Before the War, Canadian railroads jubilantly expanded. The immensity of the subsequent deflation is attested to by the fact that 1922 found the government in control of every important line but the ever-prosperous Canadian Pacific. Any government, with 23,000 miles of railroad thus suddenly thrust upon it, would be discouraged, especially when the history of the system had been one of continuous mismanagement, inefficiency, debts. The Canadian Government *was* discouraged. It is at this moment that Sir Henry Worth Thornton enters the scene.

He had been knighted by the King, decorated by three governments; he was a genius in railroad transportation and already a legend in railroad circles. American-born, his training had been on the Pennsylvania. His best known work there was with the Long Island Railroad, but he is probably more grateful for an event that transpired earlier in his career. Leonor Fresnel Loree, at that time general manager, wanted a school for his railroad's aspiring employees. He chose Mr. Thornton to teach it, railroaded him through every department, and thereby gave him experience and background few men his age had heretofore acquired. This alone might have qualified him. But in 1914 he added to his prestige by his management of the Great Eastern Railway of England which, since it was War-time, might otherwise not have run so well. When in 1922 the C. N. R. asked him to become president of its lines, Henry Thornton was the only logical choice. Perhaps that is why he accepted.

About railroad men, anecdotes abound. Of the many in which Sir Henry figures, the most typical is the first. At Belleville, Ontario (while he was inspecting the system for the first time in his life), somebody pointed to an inspector and explained that he was the oldest employee of the line. Sir Henry approached him and took his hand. "Isn't it odd," he asked, "that by chance the oldest employee and the newest should meet here on the level?" It was probably not calculated. But had it been, it could not have served better to incorporate into his force a new sense of unity and enthusiasm. Sir Henry continued to do that—and then he was able to turn to the more serious task of competing with the venerable C. P. R.

"You own it—use it." On some such patriotic appeal the C. N. R. might (and has) bid for business. Yet perhaps one of the greatest indications of Sir Henry's character is that as soon as his system got under way, this type of appeal was no longer advertised. But not advertising it does not abolish it. The appeal exists. But Sir Henry seems to know that man travels not by patriotism alone. He strove to give better service.

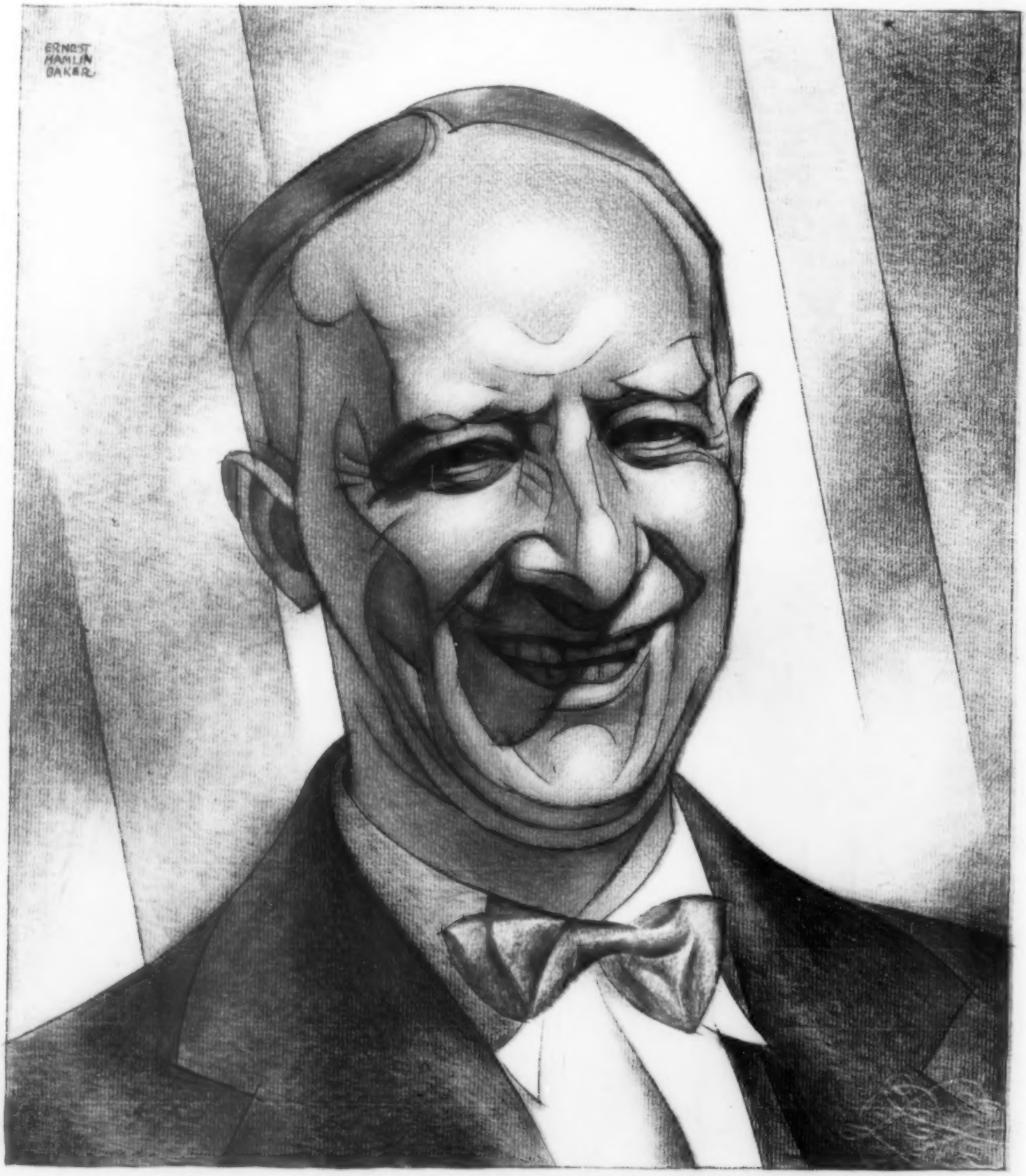
Time was, for example, when C. P. R. was a rich man's stock. Even the break didn't carry it far below the $200 club. Now, however, the stock is being split four-for-one, and it is expected that the roll of stockholders will lengthen. In this way C. P. R. is spreading goodwill. And there is no denying that the C. P. R.'s attitude toward the public has improved since the C. N. R. was born.

The points at which C. P. R. and C. N. R. competition flare up are many. There are two express companies, two telegraph companies. There are cities where each company has a hotel. Certain waters are served by each. It will be a long time before this tide of the battle swings either way—if ever. But there is one pitched battle that the whole world can notice. And that is the battle for passenger traffic. Which also is goodwill. And which, according to certain schools of economists, is all-important.

Sir Henry, of course, is he who is behind every move the C. N. R. makes. So well is this understood that C. P. R. men unofficially refer to "competition from Sir Henry" instead of "competition from the Canadian National." Herein lies the difference between himself and that other great executive, Mr. Beatty of the C. P. R. For Mr. Beatty is one of the brilliant manifestations of his railroad. It is otherwise with Sir Henry. His railroad is manifestation of himself.

Sir Henry thus far seems to lead in the goodwill and passenger battle. He installed radios in C. N. R. observation cars and tactfully provided earphones so that the peace of non-listeners might not be disturbed (most of the programs, incidentally, are picked up from C. N. R. stations). He believed (or realized) that speed counted. C. N. R. trains almost weekly become faster, more efficient. And C. N. R. shops are working on a new Diesel electric engine that may revolutionize transportation (already one of Sir Henry's expresses goes from Montreal to Toronto [334 miles] in the magnificent time of 360 minutes). And on this express one may telephone, during the trip, from a sound-proof booth.

On the surface these seem slight changes that any day the C. P. R. may equal or surpass. But they are significant of a new pace in Canadian railroads set by the C. N. R. The C. P. R. may not decline because of the C. N. R. but there is no indication that the C. N. R. will not continue its truly phenomenal advance. "A railroad," says Sir Henry again and again, "is never finished."



PORTRAIT OF ALFRED EMANUEL SMITH—*BY ERNEST HAMLIN BAKER*

Governor Smith of the *Empire State*

The eighty-five-story height of a political career.

Underwood & Underwood
JOHN JACOB RASKOB

The guardian angel of Mr. Smith's political career accompanies him into business to become the *primum mobile* of the Empire State Building.

THE truth is that it was Mr. Alfred Emanuel Smith who tore the first sliver from the old Waldorf-Astoria. Prior to that act (which occurred in the fall of 1929), Mr. Smith's association with the hotel had been casual. Oscar did not remember it at all. And Oscar remembered almost everything. (Oscar was the part of the Waldorf that was not torn down and the rest of his name, for those who need to ask, is Tschirky.) Oscar remembered the Duke and Duchess of Veragua in 1893; and Li Hung Chang, the wisest of Chinese statesmen, who brought his own cooks with him in 1896 and ate God knows what in his own apartment; and Prince Henry of Prussia, who complained about the hot water in 1902; and John W. Gates, who lived in the best rooms in the hotel at $20,000 a year and used to bet on the course of rain drops down the window glass; and Mr. Gates' friends from Chicago who thought up the U. S. Steel Corporation one evening in the Gentlemen's Café; and Mrs. Bradley-Martin on the arm of John Jacob Astor; and Rudolph Guggenheim's dinner for forty with nightingales in the rose bushes and grape arbors on the chairs and a lake of real water in the center of the table. But he did not remember Mr. Smith. He believed that Mr. Smith had on certain occasions paraded past the Fifth Avenue frontage. But he could not be sure.

As a matter of fact, there was no reason why Oscar, his mind occupied with Edward Albert, Prince of Wales, and Diamond Jim Brady, should have remembered Mr. Smith. Mr. Smith was the young man who served the first jury notices in the "new part" and who was the guest of honor at the Second Panel Sheriff's Jury Dinner. Oscar never bothered about such things. Also Mr. Smith was a New Yorker, a familiar of Pike Slip and Coenties Slip, a member of the James Slip Rangers and a Fire Buff. And Oscar knew very little about native New Yorkers. The Waldorf was like a British consulate in a Chinese port. It enjoyed a kind of extraterritoriality on Fifth Avenue. It was a bit of old Indiana or a bit of old Germany or a bit of Mrs. Ogden Mills. And New York was another thing altogether. New York was below Fourteenth Street and under Brooklyn Bridge. And its citizens felt out of place in the Thirties. Mr. Smith had once gone as far north as Central Park West with an armful of jury notices "and there was nothing there but rocks, with squatters living in little shanties on top of them, surrounded with goats and dogs." Also he had seen a cow at Fifth Avenue and Nineteenth Street grazing on $2,500,000 worth of land. It was very interesting, but it was not New York.

The fact that this same Mr. Smith was the instrument selected by whatever department of providence it is that selects instruments to destroy the Waldorf and build eighty-five stories and 200 feet of mooring mast over its well-scattered ruins has a specious air of meaning something. The truck-driver's son tears down the ballroom where Mrs. Bradley-Martin danced. The jury clerk's revenge. Something of that kind. Actually it means no more than any other coincidence of a man and a building. Mr. Smith did no more to the Waldorf than any other man in his place would have done. And there might have been a thousand in his place.

The interesting question is what the Waldorf has done to Mr. Smith. It claims to have made a man of business of him. We have had business men in politics, and we have had occasional political nominees back in business, but the true politician truly in business is enough of a novelty to catch the general attention. It is a novelty to Mr. Smith. It never would have crossed his mind back in the nineties that one day he would be governor of the state and that when he got through being governor of the state he would run for the presidency and when he got through running for the presidency he would head a corporation to build a building on the Waldorf lot. In 1890 dreams of a political future did not end in that way. You ran until you dropped, and you certainly did not retire from a public career to build a building.

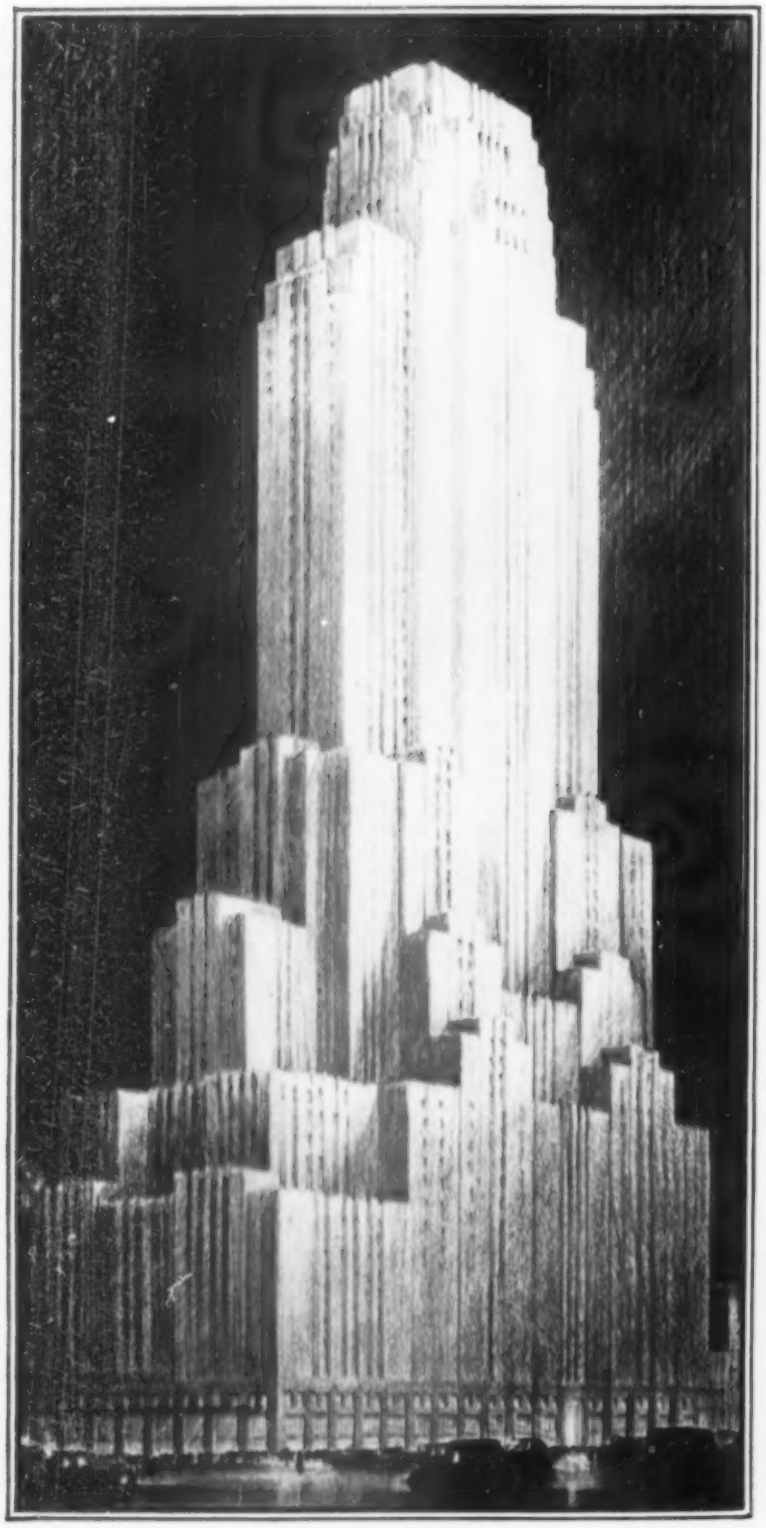
Of course, things have changed since the nineties. Al Smith has changed. Slightly. Dreams of political futures have changed (where they haven't vanished altogether, leaving the young men of our time to contemplate a maturity of unalleviated wealth). And building has changed. You no longer build a building. You build an entire city under one roof and manage it thereafter. You don't invest funds. You sink a fortune. And you don't have to retire from public life to do it. On the contrary you retire *into* public life. Your memory will be as green (provided your building is tall enough) as it would have been had you kept a nation from war and died, covered with degrees and editorial comment, in your native township.

But in spite of the changes it is hard to believe that Mr. Smith has actually ceased to be a politician and has actually become a man of business. He sits in an office carpeted in Kelly green with a gigantic plaster model of the Empire State Building on a table against the wall. He is still guarded from the press by his personal Colonel House, the omniscient Mrs. Moskowitz. He is still, if for other reasons, in touch with the trucking companies and the builders and the City Hall inspectors and the labor people. And at his door stands Sergeant Roy, a great Irish-looking lad with a blooming face and the side hair sleeked across the skin of his cranium. Sergeant Roy has been on loan from the department as bodyguard and bouncer for seven years, and now that his master has mysteriously taken to conferences with architects and engineers instead of up-state committeemen he still keeps the door with an eye out for the mental cases that public greatness always attracts. The whole office and all its employees have an air of their own. There is none of the dry alacrity of a business executive's suite. For one thing, the nature of Mr. Smith's duties does not require it. He is a member of the Board which administers the construction of the Empire State Building. (Nowadays, as will appear in the following pages, the construction of a great building is in the hands of a committee rather than in the hands of a single man.) But he is chiefly valuable to his associates for the weight which his name carries with the general public and with individuals in business and in public life. If he is sometimes pressed he is pressed in his own way and in his own time—not as the balance wheel of an intricate organization is pressed by the wheels under it. And the occasional sullenness he puts on in the face of his new duties is as obviously a reaction to an unfamiliar and unnatural world as a schoolboy's homesickness. It isn't his affair.

One gets the impression, that is to say, that the Waldorf has done plenty to Mr. Smith. And that Mr. Smith has a certain animosity in consequence. He tells you that they couldn't sell much of the old building. Two thousand doors to Mr. John Ringling of Sarasota—for what use nobody knows though anyone can speculate. Three thousand dollars worth of glass and mirrors to the hinterland hotels where the ghosts of the reflections of Mrs. Oelrichs and Lily Langtry will meet strange faces. And of the marble pillars, none. No one would buy those pillars. They were loaded on a barge and dumped at sea. . .

Skyscrapers: The Paper Spires

How the world's tallest building was raised without steel or rivet: the blueprint towers: the walls of ink. FORTUNE'S exploration of the skyscraper enters the world of plans and architects and engineers with the Empire State Building in the foreground.



IN February, 1930, the block on Fifth Avenue between Thirty-third and Thirty-fourth streets in New York looked like a corner in Ypres. There were a few chunks of mortar and a few fragments of the walls of the old Waldorf-Astoria Hotel along the north side of the block. There were a few newly excavated holes in the center. There was a long curving wooden ramp for the trucks. And that was all.

In February, 1930, the steel for the new Empire State Building to rise on the Waldorf site was pig iron and ore in Pennsylvania yards or metal under process in the mills of the U. S. Steel Corporation. The limestone was uncut blocks in the quarries of Indiana or a part, still, of the underpinning of that resounding state. The bricks were clay in the clay banks of New York.

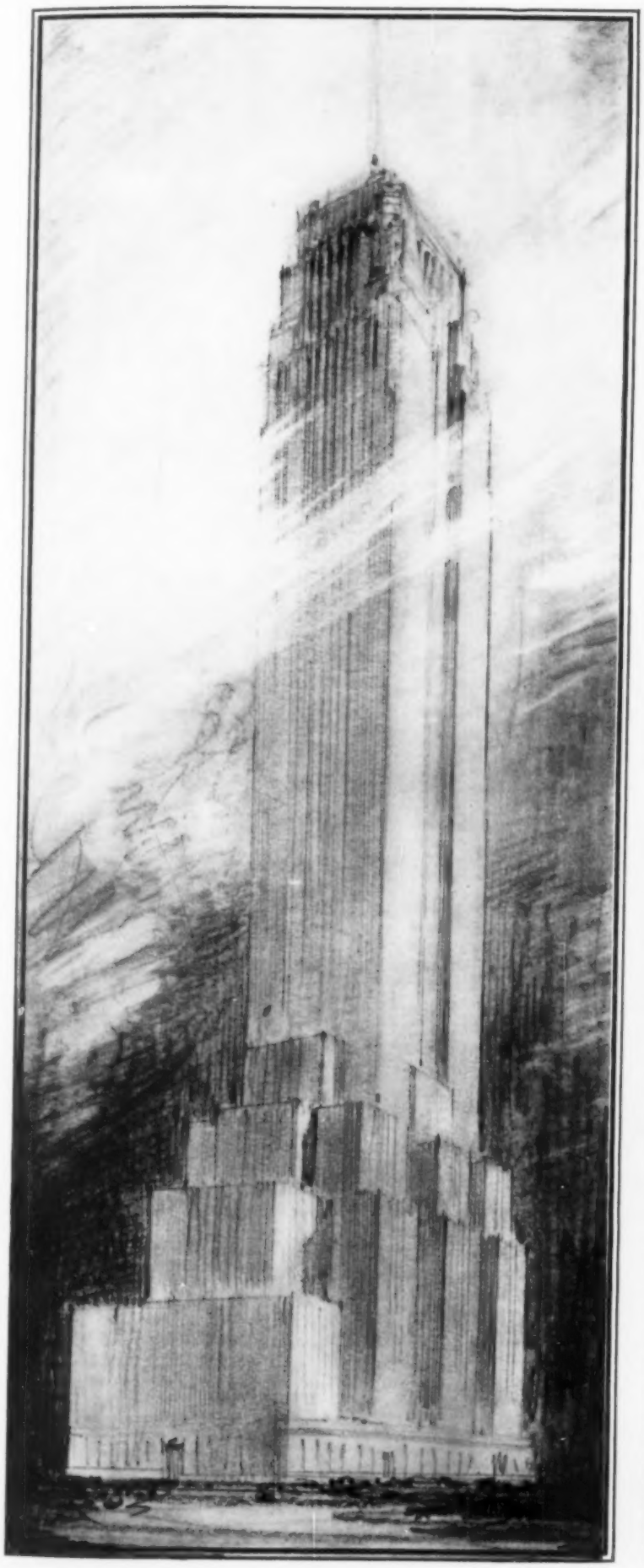
And already in February, 1930, the Empire State Building existed. It existed not only on paper but in time. It leaned forward in a definite and certain sequence from that February day to a day fifteen months in the future when the calendrical earth should have swung its foundations into their final place beneath the last flag rope on the roof. Everything—every conjunction of stone and steel, every crossing of water pipes and conduits in the floors, every precise location of a metal joint, every workman's labor, all deliveries, all inspections, all payments and advances, all delays, even the snow storms and the days of rain—the whole history of the building was foreseen. So far as anything can exist before the hands touch it, the Empire State existed. It was as real to the draftsmen at the architect's table talking about the windows of the sixty-second floor as though they were looking out of them and feeling their way as though on foot around the angles of the tenth floor stairs. It was real to the builder's office where a year from next May was as present as though it had already come. It was even real to the ordinary citizens of the town who had grown accustomed over a long period of time to see such things happen—sometimes, and who were predisposed to believe they would occur again. No one had ever seen a building 1,050 feet and eighty-five stories in the air with an observatory floor at over 1,200 feet. But the observatory of the Eiffel Tower was 905 feet, the observatory of The Manhattan Company Tower 836 feet, the observatory of the Chrysler Building 783 feet, and the needles of both the Chrysler Building and the Eiffel Tower cleared 1,000. A few hundred feet more were certainly not beyond the limits of the possible. In New York.

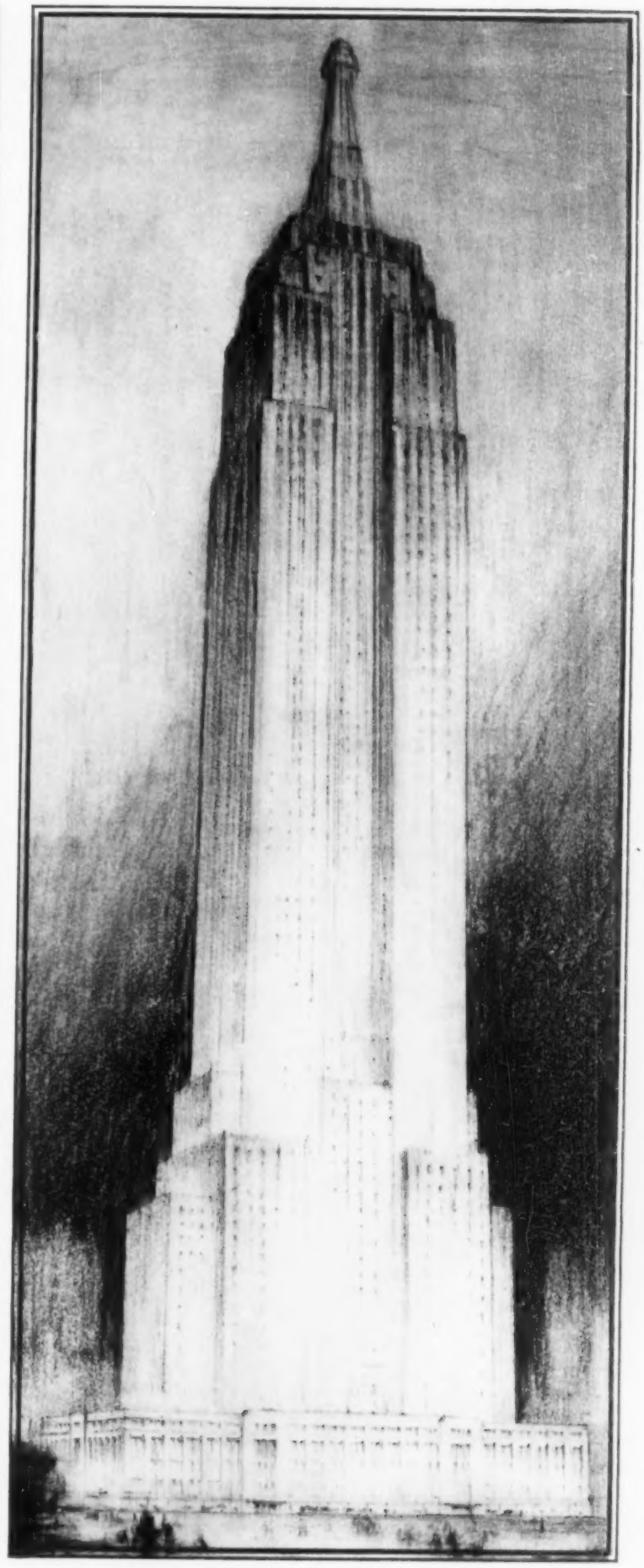
As for John Jacob Raskob, chairman of the Democratic National Committee, and Pierre Samuel du Pont and the Chatham Phenix

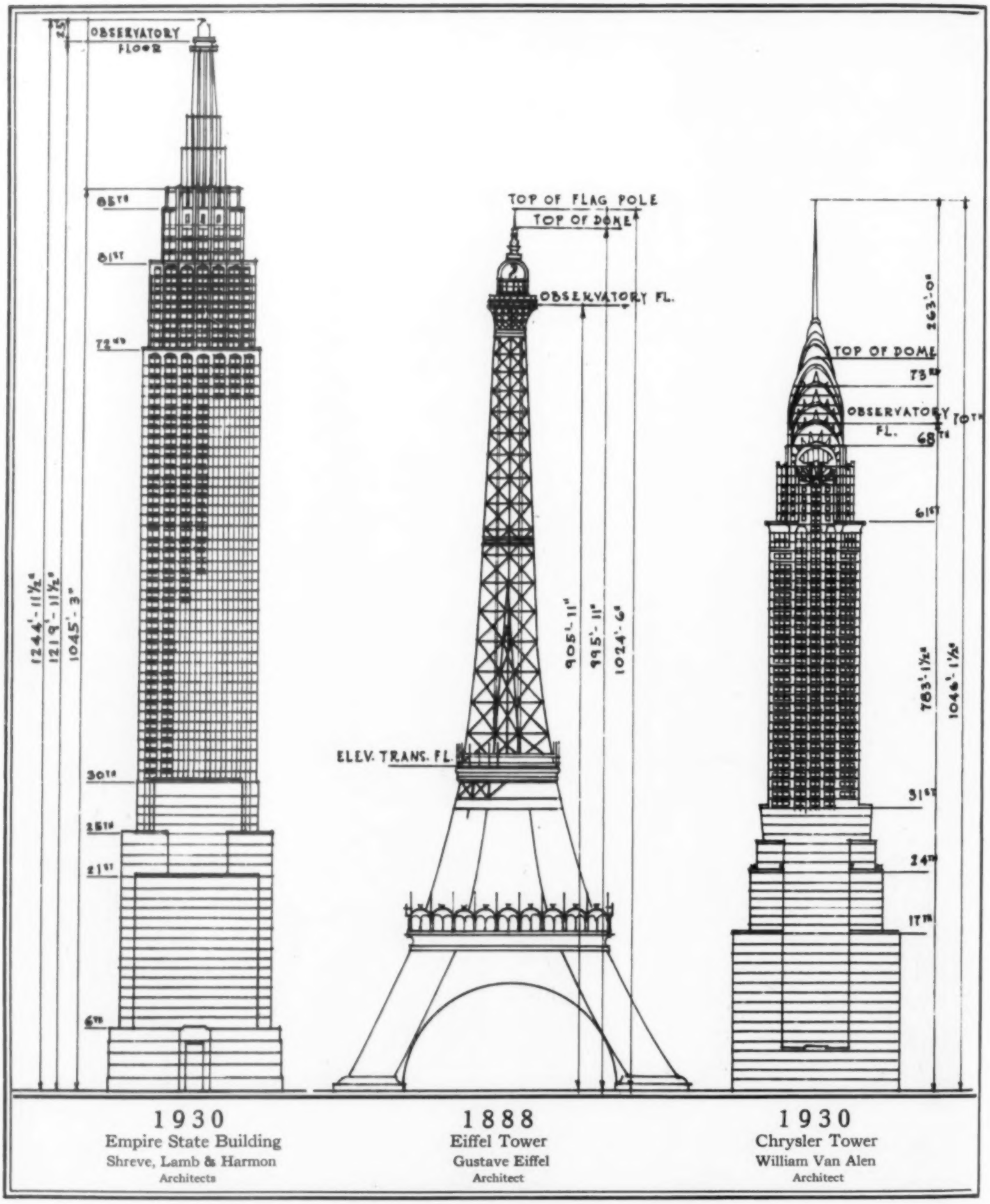
[*Continued on page 58*]

THE GENESIS OF THE EMPIRE STATE BUILDING

The elevation on the left is the original fifty-five-story loft building planned for the Bethlehem Engineering Corporation, first purchasers of the Waldorf site at Fifth Avenue and Thirty-fourth Street in New York. The first elevation opposite is the architect's sketch of an intermediate stage of the building. Empire State, Inc. has bought the lot and has decided to erect an office building instead of a loft building. To secure the necessary light and eliminate the dark core of the loft building, the cube has been indented with light courts and the tower raised. The second elevation opposite, Scheme K, represents the Empire State Building as it will look on May 1, 1931. The cube of the original loft building has been sheared away to leave the tower free. The loss in floor space is canceled by the gain in light and hence by the gain in rentals. This building will be much the tallest structure in the world.



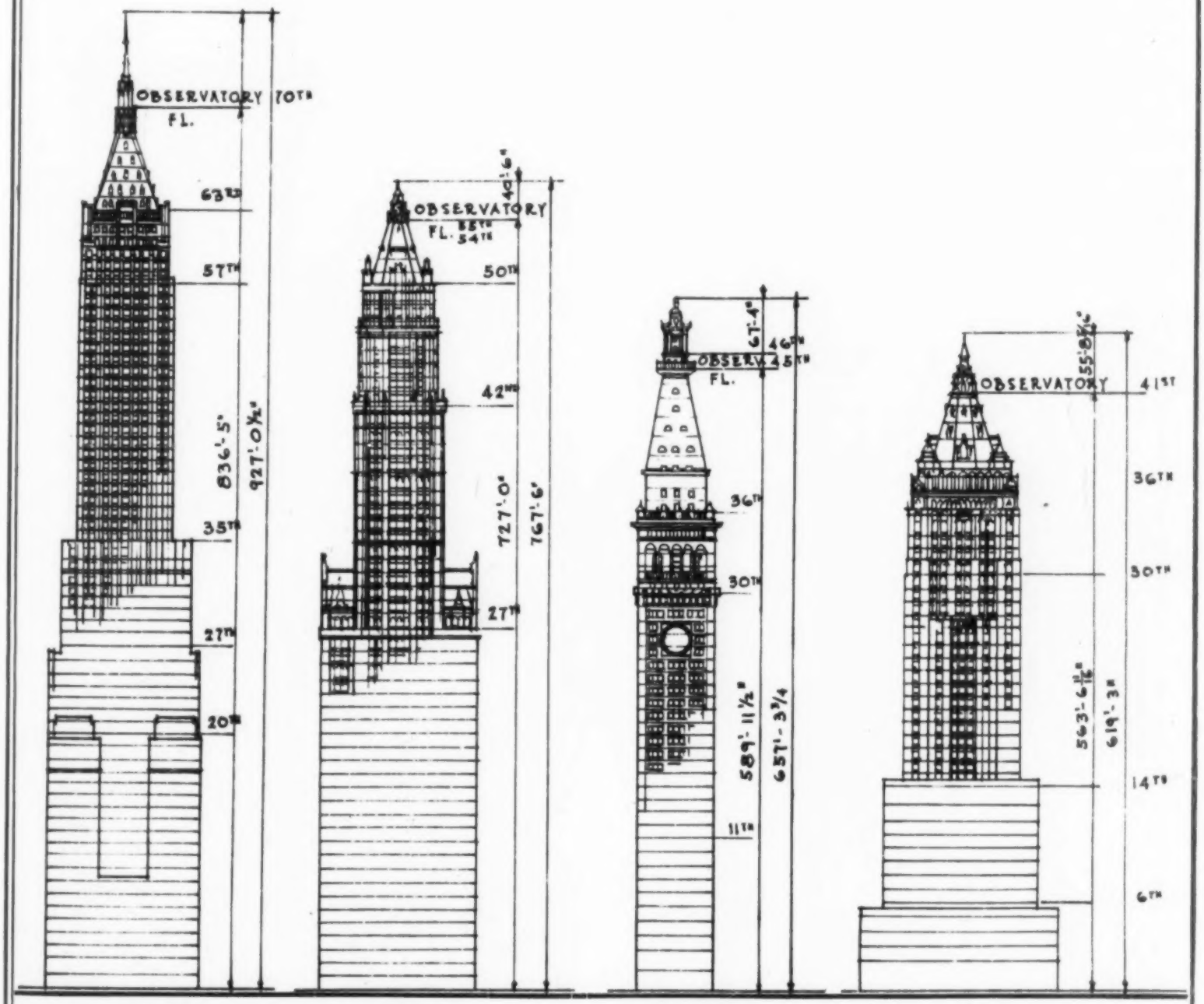




1930
Empire State Building
Shreve, Lamb & Harmon
Architects

1888
Eiffel Tower
Gustave Eiffel
Architect

1930
Chrysler Tower
William Van Alen
Architect



1930
The Manhattan Co. Tower
H. Craig Severance, Architect
Yasuo Matsui, Associate Architect

1912
Woolworth Tower
Cass Gilbert
Architect

1908
Metropolitan Tower
N. Le Brun & Sons
Architects

1929
New York Life Insurance Co. Tower
Cass Gilbert
Architect

Corporation and the Metropolitan Life Insurance Company—if the Empire State Building was not real to them they were incurable romanticists and daydreamers. They were paying for the job. They had chosen a lot in a section of mid-town New York where no large office building had ever grown before, a section which the Forty-second Street development and the general northward march of civilization had overlooked. And they were, in effect (and not in effect only), betting $50,000,000 that that lot, in that section of the city, would support the biggest building in the world. It was a very spectacular gesture. If they were right they might succeed in domesticating the migratory real estate operators of Manhattan within the present uptown frontiers. They might fix the center of the metropolis. If they were wrong they would have the hooting of the experts in their ears for the rest of their lives.

The experts had been doubtful about the whole project from the start. First there was the old Waldorf-Astoria Hotel coming down after thirty-five years of glory and Hook & Eye Association Banquets and visiting delegations and Peacock Alley because the land was worth too much. The land had increased five or six times since William Waldorf Astor wiped the ink of the New York press from his fingers and moved to England. The Waldorf had been too sumptuous. It had too much space in it. No hotel standing on $200-a-foot land had a right to that much idle space. Secondly, there was the Bethlehem Engineering Corporation selling out. The Bethlehem Engineering Corporation had bought the Waldorf to replace it with a fifty-five-story loft and office building. And the erection of a loft building in place of a hotel is as naturally associated in the real estate mind with an anticipated decline in land values as a crow with a dead cat. And finally here was Empire State, Inc. taking over the Bethlehem project and planning to replace the still-existent Waldorf Hotel and the non-existent loft building with the biggest office building in the world. There was nothing inherently improbable about a great office building on Fifth Avenue and Thirty-fourth Street. The northward wash of building development, having struck Central Park and the limit of profitable commercial construction, was bound to wash back again. And the people financing the building were convincing enough. (Influential backers will bring tenants into a building almost regardless of its location.) But the sequence of events was disconcerting, and the real estate experts were sitting tight.

As for Mr. Raskob and his friends, they merely remarked that their building stood midway between the Grand Central Station serving Connecticut and New York and the Pennsylvania Station serving Long Island and New Jersey, that those terminals were probably fixed for all time, and that the section between them was a convenient location for an office building. In September, 1929, they formed Empire State, Inc., with the former governor of New York as president, and the corporation went to work.

First act

Its first act was to decide on 36,000,000 cubic feet of building. Ordinarily the decision as to cubic content is one of the by-products of the architect's plans, but Empire State, Inc., knowing the approximate cost of building one cubic foot of skyscraper and knowing how much it had to spend, determined the matter once for all by dividing their dollars by the cost per cubic foot, with the 36,000,000 result. The corporation's second act was to retain the architectural firm of Shreve, Lamb & Harmon. There remained for the future the most difficult decisions of them all: to what height and in what general form should a 36,000,000 cubic foot building on this particular plot of land, bought at this particular price, be built? In other words, what is the "economic height" (the height which will give the maximum ultimate return) of a skyscraper?

The answer to that question depends upon a great many considerations: the cost of the land (heavy land costs force buildings into the air), the shape of the plot (irregular shapes limit height), zoning restrictions (legal limitations upon height), and building costs (the cost per square foot of rentable area tends to rise as the height of the building rises).

In the Empire State Building the given elements of the problem were these:

1. The cost of the land (including carrying charges, transfer and legal fees, title insurance, etc.) was about $17,500,000 or something over $200 per square foot.

2. The lot was regular in shape and contained 83,860 square feet—almost two acres.

3. The corporation was willing to go to 36,000,000 cubic feet. In terms of money this meant something up to $35,000,000 for the building alone. Cubic foot estimates are only approximate and may vary (with all fees, bonds, and insurance included) from fifty to eighty-five cents per cubic foot. But they increase as the height of the building increases and in an abnormally high building would exceed the higher of these two figures.

4. Zoning laws permitted a height of 125 feet for the Fifth Avenue frontage. Unlimited height was allowed only for that part built on one quarter of the area of the plot.

5. The time element was fixed by the accidents of the calendar. The corporation having been formed in September, 1929, and the architect retained in that month, and May 1 being the date of expiration of most office leases, and May 1, 1930, being out of the question, May 1, 1931, was fixed upon as the date of completion. This allowed a year and eight or nine months for doing what had been generally assumed, before The Manhattan Company Building was built, to require two years or more. But the enormous interest charges and tax costs during construction and the estimated $10,000 a day of full running costs thereafter made

[*Continued on page 119*]

Courtesy of Ingersoll-Rand Co.

The Waldorf ballroom where Lily Langtry danced and Diamond Jim Brady sparkled and Mrs. Bradley-Martin stole the front page from the Spanish War makes way for the Empire State Building. Already at the time of the photograph the paper construction of the Empire State was well advanced. The typical floor plans had been evolved, the architect's design was accepted, the financing arranged, the builder employed, the builder's organization set up, and the progress chart, with its provision for the completion of plans and details, etc., established.

Courtesy of Ingersoll-Rand Co.

THE TRUCK ON THE BALLROOM FLOOR

Newspictures Ignore Profit & Loss

A business which demands skill and prays for luck—important because the twelve largest English language newspapers are pictorial.

NEWSPICTURES is a business in which the name of Mr. William Randolph Hearst is justly honored and stands high.

Newspictures is not a business like another. Basically it is absurdly simple. Something important happens and is recorded by the newscamera's cold eye. That is all. Except that important things happen in broad daylight, storms, pitch-black night, leagues under the sea, miles above the earth, in planes, trains, ships, buildings, bathtubs.

The newspicture man brings you everything. On succeeding pages appears a charivari of his wonders.

King Hearst

In the roaring California nineties, when Mr. Hearst personally edited his San Francisco *Examiner*, he began to make those regal gestures which soon stamped him as the undisputed King of Newspictures. In 1897 we find Mr. Hearst chartering a special train to rush pictures of the Corbett-Fitzsimmons fisticuffing at Carson City, Nevada, to him ahead of the U. S. mail. No other editor dreamed then of such "wild extravagance" —thousands of dollars instead of a two cent stamp! But the scoop made Hearst *Examiner* circulation jump like a cow pony stung by a wasp. When the mail train finally chugged in with fight pictures for other San Francisco papers, they did not print them, fearing mockery for being "on the freight."

Scooping the War

It has been said that Mr. Hearst was the only newspicture executive who foresaw the World War as it would affect his business. Certainly he made expensive contacts years ahead of 1914. They included digging up a German doubly gifted with high official contacts and a talent for wangling results who could be trusted to lay out a little slush fund where it would do the most good. In the early months of the War, when pictures were at their highest premium, Mr. Hearst was more than ever King. His henchmen obtained scoop after scoop from behind the German lines, from within the iron ring of Imperial

Underwood & Underwood

W. R. H.

Newspicturemen: "He made us what we are today, and we are satisfied."

censorship, from between the destructive German eagle's very talons.

In those first pictures there were thundering shock and thrill. To a world that had only looked on peace, the Hearst organization brought pictures of enormous Belgian fortresses blown to chunks. Above the ruins posed spruce Prussian officers, booted and gloved, wearing their natty binoculars as though at a horse race. Mud-crusted gas masks came later.

From within the Belgian lines came pictures of grim, heroic, vain resistance. In those days it was indeed *Deutschland über Alles!* From the sea came perhaps the outstanding Hearst scoop picture of the War: the sinking of the British dreadnaught *Audacious* (see page 62). Briefly, it was not until four years and one day after this event that the British Admiralty admitted that Mr. Hearst had been right when he revealed the sinking of the *Audacious* in his New York *American* on November 13, 1914. When the truth came out, on November 14, 1918, it was relegated to an inside page of Mr. Och's New York *Times* while the front page, very properly, rang with "Peace on Earth."

Admiral Jellicoe's relentless (and silly) attempt to keep secret the sinking of the *Audacious* roused Lord Northcliffe to begin his savage and partially successful battle with the British censor's office for the release of "legitimate news." The reward of Mr. Hearst was to have his papers excluded after 1916 from all parts of the British Empire, including Canada, "for the duration." In the latter War years scoops and private initiative of any sort became impossible. The entire U. S. press was spoon fed such Allied propaganda as the story (with pictures) of the German "Corpse Factories," a story which the British officer responsible, Brigadier General John Charteris, has since admitted to friends at the National Arts Club in New York City to have been an absolute invention.

International

HEARST MEN AND HEARST CAMERAS

Behind No. 3 is Tony Sarno, who knows by sight every prominent man, woman, and child in New York. Nestling in the crook of a photographer's arm is No. 2, a "Candid Camera" used for picturing people indoors without their knowledge. With No. 6 a sharp "Candid" picture of the Court of Honor can be made from the opposite side of a large ballroom. Nos. 1 and 7 are ordinary newspicture cameras, Nos. 3 and 4 telescopics, and No. 5 is "Big Bertha," the superspeed telescopic which will make a picture of a baseball leaving the bat a quarter of a mile away.

Hearst in peace

Since the War Mr. Hearst has been the only news magnate to extend his activities into the cinema field. He was dabbling in this as early as 1914. Pathé had pioneered the newsreel in 1910, but it was Mr. Hearst who made Ancel Wallace the first newsreel foreign correspondent by sending him to Mexico City. Another Hearst cinemaman, name of Ariel Varges, was sent to Palm Beach to make the first open-air shots

of social celebrities. Previously the few films of this sort in existence were studio-made. The novelty of watching real and important people move about in the open air while one sat indoors—what a palpitating thrill that was!

In 1929 Mr. Hearst decided that the silent newsreel was definitely dead, though only some 10,000 theatres are yet wired for sound. Today the Fox-Hearst Corp., producing Fox Movietone and Hearst Metrotone talking newsreels, claims to supply "considerably more than half" the films of this character seen and heard throughout the land. With a fleet of sixty-five motor trucks equipped to make talking newsreels, each costing $35,000, the regal tradition is maintained. The King of Denmark and Iceland, His Majesty Christian X, recently consented to follow one of these newspicture trucks in order that posterity might observe his equestrianism and hear the hoofbeats of his horse!

"What's funny about that?" challenges a bristling Fox-Hearst newstalkie editor. "Maybe that day the King didn't have anything he wanted to say!" (On page 64 His Majesty rides clop, clop, clop.)

In the last few months Mr. Hearst has discovered his latest news toy, the newest wrinkle to keep his newspicture men ahead of others in some definite phase of technique. This is the "Candid Camera," a German contraption seemingly all lense, with which pictures can be taken of people without their knowing it across a room lit by ordinary electric light. English celebrities seem rather to relish being caught in all kinds of characteristic but often ludicrous attitudes, enjoy being played up in the next issue of the London *Graphic* above a kindly caption. Perhaps fearing that the captions will not be so kindly, American celebrities, especially Senators, shy and buck at the "Candid Camera." Thus far Mr. Hearst alone in the U. S. has equipped his International picture staff with this latest news weapon. The order came from W. R. personally, flashed from his California ranch. Pioneer and pacemaker, he had just scanned the *first* "Candid Camera" issue of the London *Graphic*.

International

Forced to pose with delegations on the White House lawn, always with the sun in his eyes, no President is at his best. Taken under more favorable conditions, this newspicture is probably the best yet made of Mr. Hoover.

Big Five: big news

Newspictures as a world business is conducted by the following Big Five:

Int. or Hearst International News Photos, Inc. by Mr. Walter Howey.

A. P.—the Associated Press Photo Service by Mr. Norris H. Huse.

P. & A.—the Chicago *Tribune*-New York *Daily News*' Pacific & Atlantic Photos, Inc. by Mr. Harold B. Baker.

Acme—the Scripps-Howard papers' Acme News Pictures, Inc. by Mr. Robert P. Dorman.

Wide World—the New York *Times*' Wide World Photos, Inc. by Mr. Frank J. Gilloon.

Just now the big news in newspictures is that A. P. (youngest) is rapidly on the make and badgering the other services with terrific competition. The reason why A. P. is

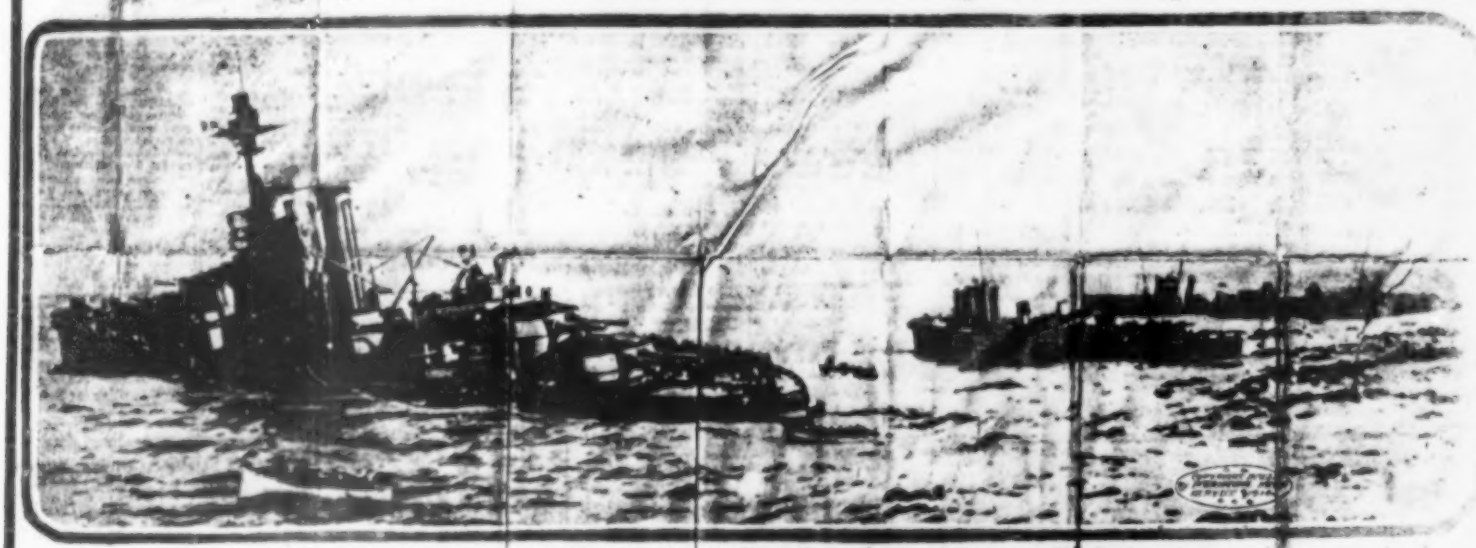
International

Few other Presidents have appeared to such advantage in newspictures. Few have arrayed themselves so variously. In this picture even the light is kind to Mr. Coolidge; even the Pierce Arrow visible in the background does not detract from an effect of almost Biblical simplicity.

Eye-Witness Sends N. Y. American Full Details of Great Naval Disaster

H. M. S. AUDACIOUS BLOWN UP, SUNK, IS TOTAL LOSS; 960 SAVED

First Photograph of the Sinking Dreadnought, News of Which Was Published by the N. Y. American Before Any Other Paper in the World



Copyright, 1914, by International News Service All Rights Reserved. Any Infringement Will Be Prosecuted.

Most remarkable photograph in present European War, showing H. M. S. Audacious sinking off the coast of Ireland, after being hit by a German mine or torpedo. The picture was made from the deck S. S. Olympic, and shows the crew of the dreadnought being rescued. The port deck of the stricken vessel is partly submerged, and the crew can be seen gathered near the starboard side. Two torpedo boat destroyers are standing by. The white life boat in the foreground belongs to the White Star Liner Olympic, and is bringing the rescued blue jackets from the sinking battleship to the New York liner. photograph, like all the details of the disaster, sent to the New York American the night it happened, will not be printed to-day in any other newspaper in the world except The American and Mr. Hearst's newspapers in other cities. Like other notable events in this war—the fall of Namur, the taking of Antwerp, for instance—the news was published in the New York American from twelve hours to four days BEFORE ANY OTHER NEW YORK NEWSPAPER OR ANY EUROPEAN NEWSPAPER.

International

International

THE FALL OF NAMUR

Above the crumbled parapet stands a spruce figure who seems to symbolize *Deutschland über Alles*.

International

BELGIANS ABOUT TO BE DESTROYED

Although the Germans, who overpowered these Belgians, have not yet appeared on the far side of Willebroeck canal, young hot-heads crouch and aim while veterans placidly lunch.

International

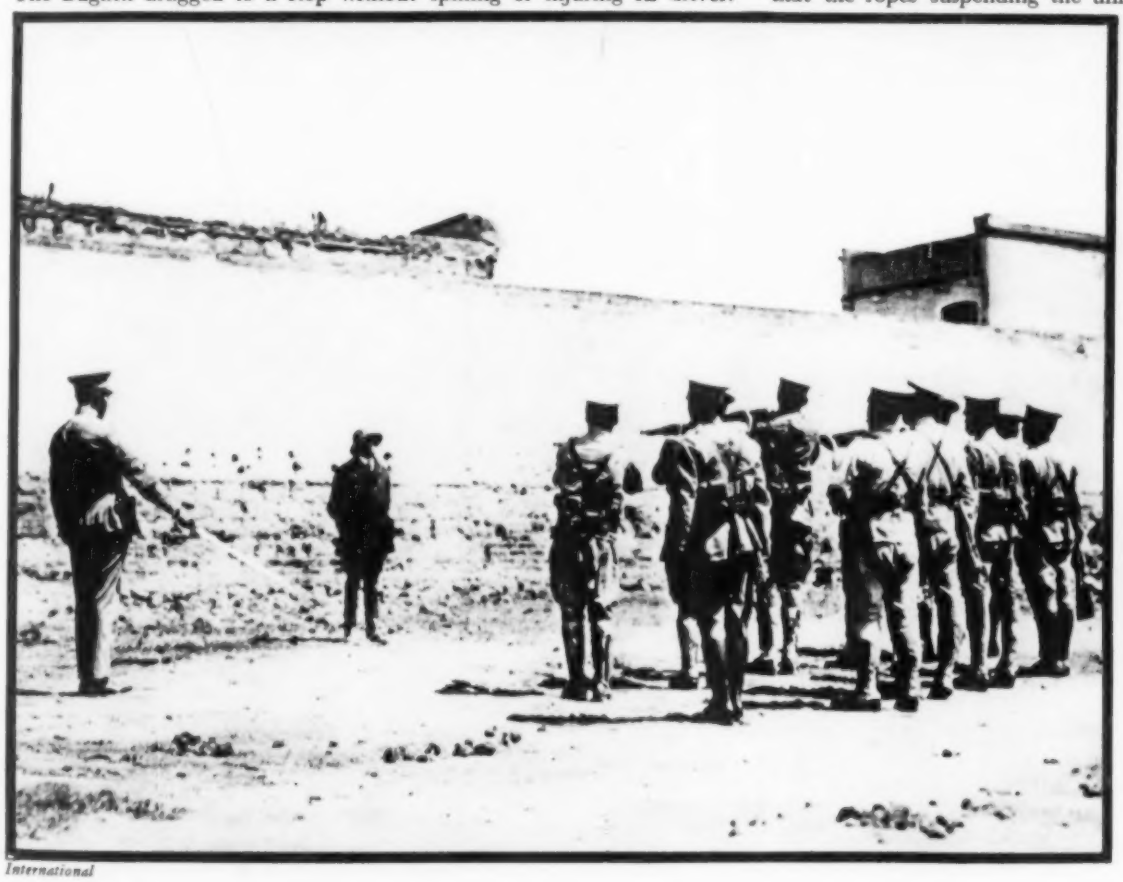
INTEREST

As the rear wheel of his Bugatti leaves him at sixty miles per hour, Mr. Raymond Mays seems interested and of fear he shows not a trace. The Bugatti dragged to a stop without spilling or injuring its driver.

©*P. & A.*

PANIC

Passengers on the *S. S. Vestris*. To visualize the tilt, hold this picture so that the ropes suspending the unlaunched lifeboats are perpendicular.



International

International

COURAGE

A gallant Mexican who fought on the wrong side during the Serrano-Gomez revolt of 1927: General Alfredo Rueda Quijano. Above, saying goodby five minutes before his execution; left, ten seconds before the volley.

© International

ROYAL HUMILITY

So that commoners may enjoy the sound of his horse's hoofbeats, His Majesty Christian X, King of Denmark and Iceland, consented to follow a newstalkie truck. Cost of truck, camera, and sound recorder complete: $35,000.

able to play Little David in an arena crowded with Goliaths will presently appear.

It costs so much to make newspictures that the founders of the industry were necessarily men like Mr. Hearst, dynamic proprietors of wealthy newspaper chains who could and did say in effect:

"Get me the best pictures in the shortest possible time. Damn the cost! The prestige of my papers demands complete picture coverage and as many scoops on top of that as you can get!"

The old guard firms still sail under these lusty orders, defying Economics in the name of Prestige. After satisfying the imperative needs of the newspaper chains or feature syndicates of which they are subsidiaries, they try not to make ends meet but to make them approach. This is accomplished by peddling their surplus prints to outside papers.

A few salesmen and many mail carriers rush out daily with these offerings. The individual newspaper editor, when he gets a batch of prints, merely picks out and pays for those that please him, sending back the rest (or all), which become so much dead loss. Who shall say that this is an uncertain, wasteful, basically uneconomic, positively absurd mode of distribution? It is the way other things are sold wherever traveling salesmen travel.

Entering the newspicture business as an experiment, only two and one-half years ago, the A. P. or Little David outfit started with two basic assumptions: first, that each of the Associated Press news correspondents throughout the world was a potential news cameraman or at least had sense enough to buy newspictures from local photographers; secondly, that the thousands of newspapers

Ernest C. Rawleigh

Underwood & Underwood

"THE LAUGHING CAT"

The cat (above) and kitten (opposite) are the largest selling newspictures of all time. Two small but prosperous corporations sell them in monthly thousands on calendars, novelties, and cheer-you-up cards. "The Laughing Kitten" is always sold captioned, "Ha! Ha! Ha! It must be so!"

P. & A.

PRESIDENT GRANT WITH PARENTS OF ARISTOCRATS

Center, President Grant. Extreme left, John W. Mackay, father of Clarence Mackay. Extreme right, J. G. Fair, father of Mrs. W. K. Vanderbilt and of Mrs. Herman Oelrichs. The lady in the derby hat is Mrs. M. G. Gillette. Next to her the President's son, Mr. U. S. Grant, with Mrs. Grant Sr. Kneeling before the President, cook boy Yanada. Behind him Mrs. Fair, next to her Governor Kinkead of Nevada. This newspicture was taken during President Grant's inspection of the Bonanza Mine, basis of the Mackay-Fair fortunes. Old John Mackay, "Prince of Miners" and "Boss of the Big Bonanza," emigrated from Ireland, swung a pick and shovel, died worth more than $60,000,000.

receiving A. P. news service could be signed up to take a package of A. P. newspictures every day at a flat rate.

Both of these assumptions have proved correct. As an inducement A. P. makes their newspicture contracts cancelable by the member papers at any moment. They have now signed up some 600 papers and claim that not one has canceled. As A & P stores make things hard for the traveling salesmen of canned groceries, so A. P. is crowding the peddlers of pictures.

"The little ladies"

Picturesque are the old guard picture salesmen, whom it is cruel but necessary to call peddlers. Their packs are leather briefcases expanded to an astounding bulge by a load that may run to 500 pictures or more. Although garbed and mannered like other aggressive salesmen, their weapon is not ten-cent cigars but something mysterious, cheaper, and possibly more effective.

Facing an editor-client who exhibits the malady of sales resistance they may, when other remedies have failed, attempt to cure him by the talismanic words:

"Perhaps you'd like to see our boys latest bunch of little ladies?"

If the patient stirs and mumbles favorably, out of the pack whisks a tightly clipped envelope. From it appear pictures of local burlesque beauties and night-club hostesses, all in the particularly total nude. "Perhaps you know this one?" suggests the salesman. And perhaps the grand-old, two-fisted, he-editor does. Even for the less robust the "little ladies" may have an attraction. There is no sight so hilariously funny or so sordidly pathetic, according to one's mood, as a forty-year-old burlesque *ingénue*, reclining "well preserved" in a Cleopatran attitude on a cheap, overstuffed lounge clad in shoes and stockings.

How are such pictures obtained? "It's a cinch!" the salesmen readily explain. "When a little lady is having her reg'lar picture taken, why naturally she don't mind obliging the boys afterward,

© New York World

"A BREAK"—1910

A great newspicture is often the result of a "break" (fate). When Mayor William J. Gaynor of New York was about to sail on the *Kaiserina Augusta Victoria*, the New York *World* cameraman, Bill Waneke, arrived "too late," so late that he was the only newspictureman present when a would-be assassin fired on the mayor. Mr. Gaynor, who lived for three years after this picture was taken and would never allow the bullet to be removed, always spoke of it as "this fishhook in my throat."

P. & A.

"WE"

Captain (later Colonel) Charles Augustus Lindbergh Sr. in the *Spirit of St. Louis*, leaving America on the first and only successful trans-Atlantic flight to Paris. He was followed by a P. & A. newsplane, which turned back with its unpredictably precious negative when he was 100 miles at sea.

so's they'll try to get her reg'lar picture printed. It's all part of the public'ty business, see?"

Prestige is profit!

Are the old guard newspicture executives downhearted about the poor results of peddling? By no means! They are successful business men creating Profit in the form of Prestige. One ghastly picture—Ruth Snyder "burning" in the electric chair—when slapped upon the front page of the New York *Daily News* jumped sales 500,000 extra copies.

The panic pictures of passengers aboard the sinking *S. S. Vestris* (see page 63) were another scoop for the same Manhattan tabloid and its parent, the Chicago *Tribune*. Bought "dirt cheap" for $1,200 from the amateur who snapped them, the *Vestris* pictures were valued by *Tribune-News* editors so highly as Prestige, that, at the time, they would not sell these negatives at any price.

Now that stocks and bonds of the Hearst enterprises are being sold to the public, Mr. Howey of International has to think fast. There were squawks a few months ago that he was spending too much. With a snort worthy of W. R. himself, Mr. Howey plunged into a survey of the entire English language press. Soon he had figures to prove that the twelve circulation leaders, five English and seven American papers, all carry at least one full page of pictures daily and intersperse others throughout the text. Today the left half of envelopes in which International mails pictures is splashed with a thundering slogan: THE WORLD'S TWELVE LEADERS ARE PICTORIAL PAPERS AND EIGHT OF THEM USE INTERNATIONAL NEWS PHOTOS. It was a tough assignment, but Mr. Howey feels he has proved the case for Prestige, and Mr. Hearst has said in effect: "Spend whatever is necessary to keep up the pace you have been setting." This includes exclusive pictures taken from the round-the-world *Graf Zeppelin* at a cost of $50,000, distribution of the Sharkey-Schmeling pictures (see page 107) to their clients throughout the country hours ahead of competitors, and the first picture showing Pope Pius XI emerging for the first time from the Vatican. Like all newspicture executives, Mr. Howey hires an ambulance and equips it as a developing darkroom whenever pictures must be rushed across a crowded city and developed en route.

Mr. Ochs: Underwood & Underwood

Pictures which appear in the New York *Times* and affiliated rotogravures must never ruffle, and should if possible contribute to the reader's peace of mind. In the Wide World office Mr. Gilloon quietly assembles

[*Continued on page 107*]

© *Acme*

"THE VIKING HEAD"

Copies of this three-year-old Acme newspicture are still sold in quantities to be distributed as rewards for learning one's Sunday school lesson.

International

"THE LAUGHING HEAD"

Hawked on the streets to people who had never seen their hero laugh, this picture had a meteoric sale of 2,000,000 copies, but is dead today.

Bourke-White

ΒΡΕΚΕΚΕΚῈΞ ΚΟᾺΞ ΚΟΆΞ (BREK-EK-EK-EX, KO-AX, KO-AX)

Into the line between man and death Parke, Davis & Co. throw 12,000 frogs a year, for the purpose of testing digitalis, the leaf of the common foxglove and greatest of heart stimulants. One of the most difficult drugs to standardize, the administration of digitalis used to be risky guesswork. Now the effect of each lot is ascertained by injecting samples of it into frogs—cold-blooded animals being used because of the independent action of their hearts. To determine the lethal effect of each sample, a frog must die. Digitalis makes the heartbeat strong but slow, allowing the heart to recuperate between beats. If a pulse rate of 120 a minute is reduced to 100, the heart is saved 28,800 beats a day, and the total period of heart-rest between beats is increased by four hours. Awaiting their turns the frogs are sprayed with water behind a glass door at twenty degrees Centigrade.

Parke, Davis & Co.—E. R. Squibb & Sons

Their relations with an individual named B. Tetani; how they saved Johnnie Jones from lockjaw by means of him; how they sometimes revive the dead. The ethics and perils of drug manufacture; its "islands" of Langerhans; its ill-fated horses, rats, frogs, goats, monkeys, and dogs; the sixteen doctors who scrutinize everything.

I—Tetanus

BEHIND his father's barn in Kansas Johnnie Jones stepped on a nail. Since he was not supposed to be near the barn, he told no one what had happened. He noted that the nail was not rusty, but he did not see a tiny individual named B. Tetani who had been sitting on it. Once inside Johnnie's wound, protected from the air, B. Tetani began to produce a family (out of himself). Nine days later there were millions of B. Tetani in Johnnie's wound, all of them secreting tetanus toxin, the most lethal substance ever discovered, some twenty times as poisonous as dried cobra venom. Then Johnnie began to have trouble opening his jaw.

In a fright, Mrs. Jones called the doctor, a gentleman who knew his business and who produced two glass syringes, each containing 20,000 units (about three teaspoonfuls) of amber tetanus antitoxin, which he injected near Johnnie's wound. He also shot 10,000 units directly into Johnnie's spinal canal. He explained that B. Tetani lives harmlessly in the intestine of animals, even of man; that manure had deposited B. Tetani on Johnnie's nail; that early in the World War the appalling number of tetanus cases was caused by the highly fertilized soil of Belgium and Northern France. So Johnnie's jaws did not close forever; he became one of the millions who owe life itself to science.

The pale amber fluid that saved Johnnie did not just happen. Let us suppose that it was made by Parke, Davis & Co., of Detroit, world's largest pharmaceutical manufacturers. A room in the Parke, Davis plant on the breezy Detroit River contains 700 test tubes, in each a different kind of living bacteria, most of them forming a yellowish film on the surface of a solidified gelatinous material called agar. In one of them lives B. Tetani—millions of him. Individually he looks like a little stick with a knob on its end called a spore, but you cannot see this without a microscope.

B. Tetani in a test tube is an idle fellow; Parke, Davis' job is to put him to work, produce results from him on a balance sheet. To do this, a laboratory worker touches the colony in the test tube with a platinum wire probe, transfers a few B. Tetani to a container filled with meat broth and contrived so that B. Tetani will get no air. He is then taken to the incubator, a large room that looks like a locker room in a golf club, with two tiers of lockers. Inside of each incubator a different kind of germ is producing a prodigious family; in all of them enough bacteria could be produced to kill the combined populations of the U. S., Canada, Mexico, and the Argentine. The incubators are at blood temperature—one of them has never been cool since 1903. B. Tetani is put into an incubator.

Two weeks later he is taken out—billions of him. His broth is filtered through porcelain so fine that B. Tetani himself cannot get through. He dies, but his poison trickles into a bottle and is marked "Tetanus Toxin." Now the real manufacture of the serum that saved Johnnie's life begins. The factory is a horse—a factory of legs, blood, muscle, and bone, wandering among the pleasant trees and brooks of Parkedale (the Parke, Davis farm), cropping the grass. Of the 4,000 animals that inhabit Parkedale the horses are kings, for they manufacture most of the Parke, Davis serums. They are treated like patients in a hospital; able veterinarians guard them; their temperatures

P. & A.

DR. F. G. BANTING

Of the University of Toronto, whose spectacular extraction of insulin in 1921 has doubled the life span of some people.

DR. OLIVER KAMM

Parke, Davis chemist and master of the pituitary gland, awarded $1,000 prize by American Association for the Advancement of Science, 1929.

P. & A.

DR. BELA SCHICK

Of Mount Sinai Hospital, New York, arch-foe of Bacillus Diphtheriæ, whose test divides all humanity into Schick-positive, Schick-negative.

are taken daily; they are weighed; they have a "night nurse"—a stableman who gives them water when they need it, soothes them, keeps them clean. The great kings of the race track are less solicitously guarded; the great Percherons of the plow fields do no more work.

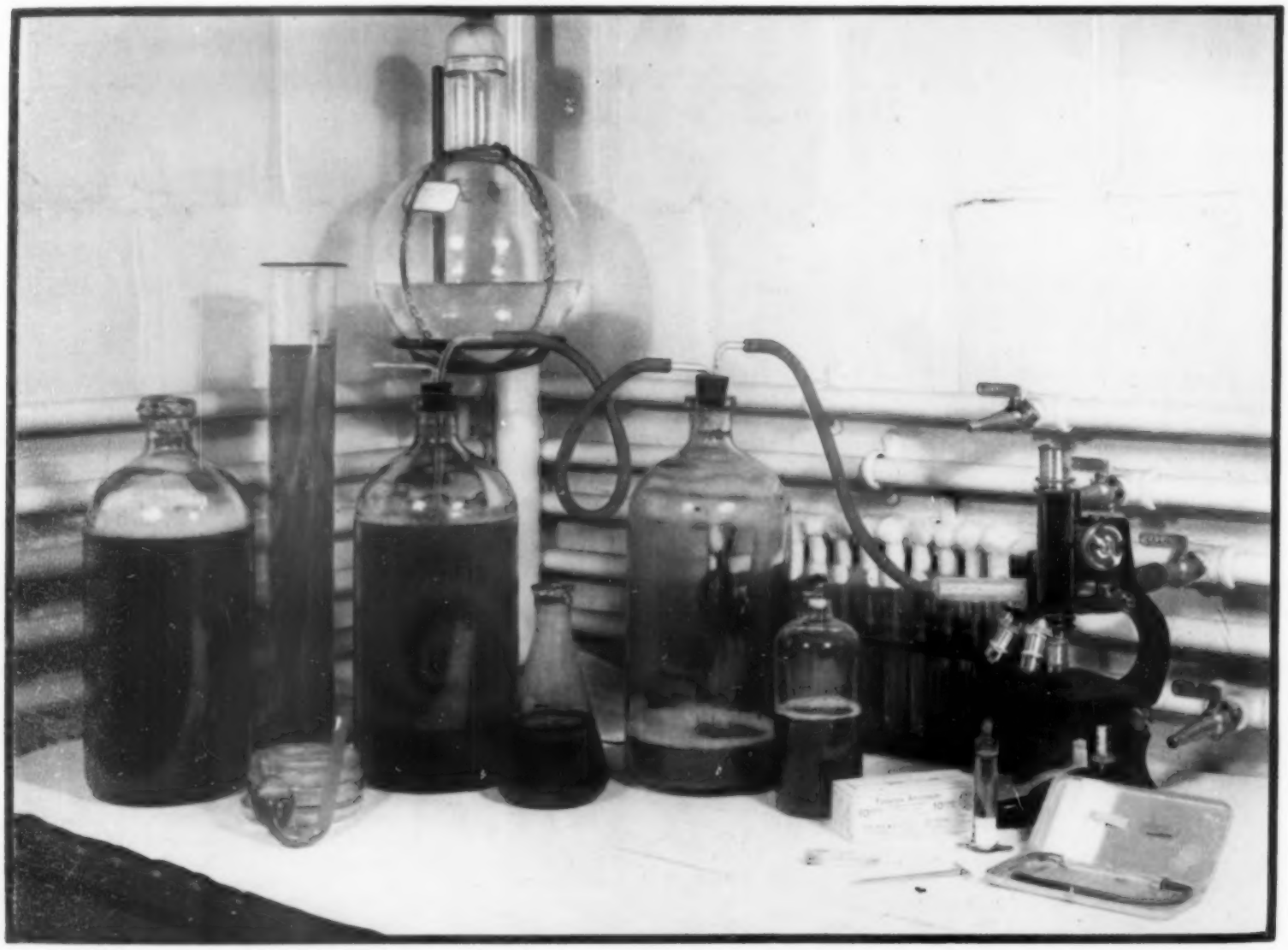
Into a healthy horse is injected a quantity of the poison from B. Tetani. It makes the horse sick, he runs a fever, but finally his blood manufactures what are known as antibodies—priceless substances capable of neutralizing bacterial poison. In his first injection the horse receives five cubic centimeters of poison—enough to kill 100,000 guinea pigs. He is injected three or four times a week for about four months, each dose larger than the last, until he is able to take 500 cubic centimeters, exterminant for 10,000,000 guinea pigs. By this time the horse is a living mine of antibodies; three gallons of his blood are drawn; and after some further processes to eliminate proteins (cause of serum sickness), the antitoxin that saved Johnnie's life is ready to be placed on the market.

II—Ether

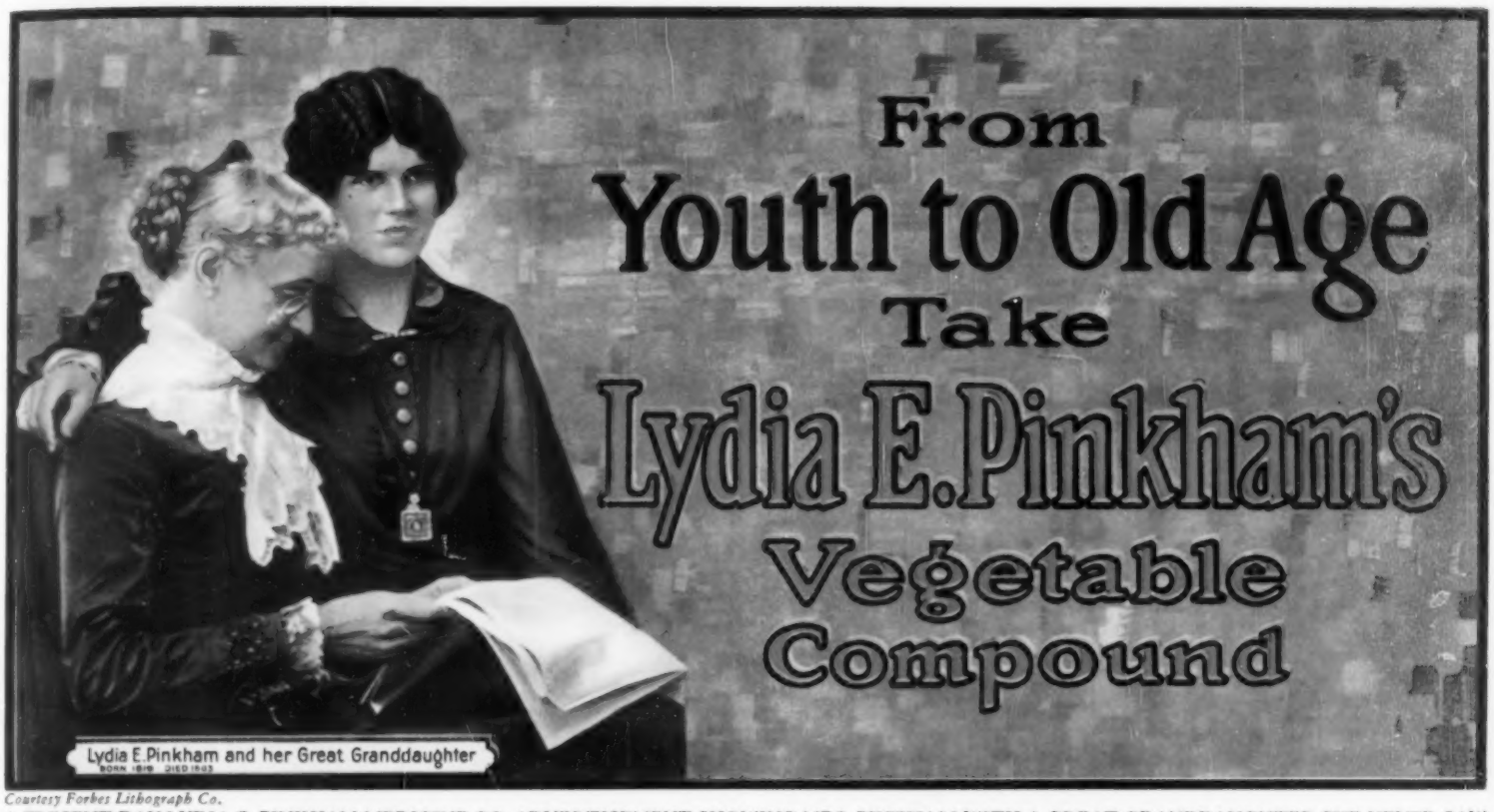
When purchasing antitoxin from his pharmacist to save Johnnie Jones, the physician is not confined to a Parke, Davis serum. He may choose the product of any one of a dozen reliable pharmaceutical manufacturers. But in administering ether he does not stop to make a choice. Unless he wants to save ten or fifteen cents he will pick up a can of Ether-Squibb without further thought, for the house of E. R. Squibb & Sons—New York, Brooklyn, and New Brunswick, New Jersey—is recognized as the leading manufacturer of ether, having at least 75 per cent of the business. This has been true ever since Dr. E. R. Squibb developed a steam process for ether manufacture, which enabled him to supply most of the Union troops in the Civil War and to become the first producer of ether on more than a laboratory scale.

Of all pharmaceutical discoveries, anæsthetics have most advanced the science of medicine, changing the bloody screaming operating rooms of a mere century ago into rooms of quiet efficiency, opening unlimited fields to surgery, enabling the laboratory researcher to gaze into the future through the vitals of unconscious animals. As opposed to chloroform, used extensively in Europe, ether is the typical American general anæsthetic. It was first prepared by Valerius Cordus in the 16th century, having among other names that of *oleum dulce Paracelsi*, and Sir Isaac Newton performed some experiments with it a hundred years later, but it was put to no practical use until 1842, when Dr. Crawford W. Long of Georgia first used it to induce general anæsthesia in removing a tumor from a Mr. James Venable.

In its development of ether the house of Squibb has had other problems to solve than that of manufacture. Most anæsthetics deteriorate on exposure to air or to certain metals. Chloroform ($CHCl_2$) oxidizes into phosgene ($COCl_2$), the deadly poison of the World War. Though there is doubt whether the mild peroxides that ether forms in deterioration are harmful, their existence is a technical impurity which troubled the house of Squibb, purists *par excellence*, for



STEPS IN SQUIBB MANUFACTURE OF TETANUS ANTITOXIN: (1) METHYLENE BLUE BY WHICH B. TETANI IS OBSERVED; (2) DEADLY INCUBATING TUBE; (3) IMMUNIZED BLOOD OF A HORSE (LEFT) YIELDING (4) GREEN ANTITOXIN FLUID (RIGHT)



Courtesy Forbes Lithograph Co.
A PRESENT DAY LYDIA E. PINKHAM MEDICINE CO. ADVERTISEMENT SHOWING MRS. PINKHAM WITH A GREAT-GRANDDAUGHTER SHE NEVER SAW

Story of a Compound

ELBERT HUBBARD, enthusiastic as usual, started with Deborah and Aspasia, skipped to Joan of Arc and Florence Nightingale, then placed Lydia Estes Pinkham in the evidently equally illustrious company of Julia Ward Howe, Harriet Beecher Stowe, Susan B. Anthony. He gloried in a parallel between Mrs. Pinkham and Queen Victoria, each born in the same year, although Mrs. Pinkham "occupied no throne . . . [and] was not born to the purple."

Some might doubt Mrs. Pinkham's right to have her name placed in such a gallery. But none can gainsay her fame or her compound's. Since 1879 her face has appeared, like King C. Gillette's on Gillette blade packages, on every bottle of her compound. Her name is spread today by $1,000,000 worth of advertising annually and $500,000 worth of promotion and by the egress from Lynn, Massachusetts, of 10,000 bottles of compound a day (and there are factories in Barcelona, Paris, Mexico City, and Cobourg, Ontario).

Quite accidentally did Mrs. Pinkham engage upon her career. The wife of a Lynn, Massachusetts, real estate dealer, she used to brew a vegetable and alcohol compound which was held in great esteem by her housewife neighbors. In the panic of 1873 Isaac Pinkham lost all his money, and the idea dawned to sell the compound. It sold, as such things do, slowly at first. But the Pinkhams were willing to mortgage their home to advertise (the first advertisement appeared in the Boston *Herald*, which still carries them), and the sales increased. And with them increased the family fortune and the size of the plant, which was once a kitchen, and the benefactions and scholarships and the distribution of pamphlets and novelties. And the compound became big business, and each generation of Pinkhams has had a hand in fostering the business and carrying it on to greater fame and success. Of the latter day Pinkhams, Aroline Pinkham Gove, aged seventy, daughter of Lydia, is the spry treasurer of the Lydia E. Pinkham Medicine Co., and her daughter, Lydia Pinkham Gove, is treasurer of the Northeastern Advertising Agency, which places most Pinkham advertisements. Of the original Lydia's grandsons, Arthur, aged fifty, is the company president; Daniel, aged thirty, Boy Scout enthusiast and sleight of hand performer, is in charge of the foreign department; and Charles, twenty-nine, probably the most popular of the three, is president of the Northeastern Advertising Agency. The great-granddaughter shown above is Priscilla Gove Talbot, twenty-two, whose father, a son of Aroline's, died five years ago with the satisfaction of knowing that he had doubled the company's business during the War by increasing instead of retrenching advertising.

The "repeater" element, that which makes you take a second dose (in the case of the Pinkham compound it is the 15 per cent alcohol), has much to do with the compound's success. But a necessary concomitant to such success is advertising. At this point Lydia Pinkham, along with certain other patented old ladies and gentlemen, meets her first rebuff. Advertising of patent medicines in America is limited:

1. Ethically, by the American Medical Association, whose *Journal* will not carry Lydia Pinkham advertising. In this, the *Journal* of the A.M.A. is followed by every self-respecting medical paper.

2. Legally, by the Pure Food and Drugs Act, under which false pretenders can be indicted. Whereas before the act the Pinkham label falsely claimed "the greatest remedy in the world" to be "a sure cure" for "all weaknesses," the label today reads: "Recommended As A Vegetable Tonic in Conditions for Which This Preparation Is Adapted." Which is absolutely meaningless though one catches the implications.

3. Haphazardly, by the American publisher, who is, or might be, a third barrier to patent medicine growth. This gentleman has made some few gestures in the direction of house-cleaning his advertising page, but so far as medicines are concerned his standards fall far below those of the A.M.A. If Lydia Pinkham's Compound is the nation's best-known remedy, the editors of cheap magazines, of small-town newspapers, and of the worst big-town newspapers have it on their souls.

Bourke-White

Pituitary glands of cows soaking in acetone, in a process discovered by Dr. Oliver Kamm, of Parke, Davis, for isolating pitressin and pitocin, two hormones formerly considered one. The little pituitary at the base of the brain is the grand marshal of glands. Its over-secretion makes giants.

Pills can be sugar-coated, but the problem of getting nasty-tasting liquids past the palate is solved by gelatin globules that will not easily break. Thus little boys and girls surrender to castor oil, cod-liver oil, and other necessities; thus sheep, hogs, and dogs condescend to worm medicines.

years after the founder's death. In 1925, Ferdinand W. Nitardy, vice president in charge of Squibb manufacturing, read that copper in contact with ether would hasten its deterioration. Since there were copper containers and pipes in the Squibb manufacturing process, Mr. Nitardy experimented with hundreds of jars of ether, into which he dropped pieces of different metals. To his amazement and the confutation of the author he was reading, he found that all the ether deteriorated *except* that which had copper in it. Protected by copper, ether forms no peroxide.

Now, all Squibb ether cans are lined with copper—patented ether process, the license for which Squibb has offered to other manufacturers. No one has purchased a license. Since ether boils at ninety-five degrees Fahrenheit, it often does so on its way across the continent to the hospitals of the West. To prevent explosions, the Squibb cans are made to withstand thirty pounds pressure, instead of the usual five for foodstuffs, and to achieve this Squibb makes its own cans—tops to bottoms. The alcohol from which Squibb ether is refined is bought from the U. S. Industrial Alcohol Corp. and carefully measured by the government. Parke, Davis does not manufacture ether.

III—Adrenalin

At the beginning of the century there occurred an exciting race. John J. Abel of Johns Hopkins, Otto von Fürth of Strassburg, Germany, and three men who were working for Parke, Davis of Detroit were trying to isolate the principle of two little glands, each shaped like a cocked hat, embedded in fat above the kidneys and called suprarenal or adrenal glands. Though Dr. Abel first isolated a modified principle, it was a Japanese—Dr. Jokichi Takamine, Parke, Davis consultant—who first lifted against the light a test tube containing a precipitate composed of lovely octahedral crystals with the moving name of lævo-methylaminoethan-olcatechol. This adrenal secretion was the first hormone (ductless gland secretion) ever isolated by man.

The adrenal secretion, acting on the sympathetic nervous system, is what stimulates the body to the reactions of fear and rage. Your adrenals are secreting when you storm at your secretary; also, when a child runs across the street in front of your automobile. Many things happen inside of you: blood leaves your skin and stomach, is concentrated at your heart, lungs, arms, legs; body starch—muscle food—pours from your liver to enrich this blood; your heart jumps to provide faster circulation, more oxygen; finally, in case you should be wounded by the emergency, your veins are constricted, and the coagulation time of your blood is shortened.

All these things can now be caused artificially by what Parke, Davis has christened "adrenalin"—a trade name as universally used as "kodak"—in place of the officially correct "epinephrine." The action of adrenalin is violent, lasts only about an hour, is used chiefly in emergencies. Most spectacular of its achievements is the Messianic one of resuscitation of the dead, somewhat exaggerated by newspapers, yet essentially a fact. If injected directly into the heart not more than ten minutes after the organ has stopped beating, it may, particularly in cases of collapse from drowning and general

anæsthesia or in the newborn, call the body back to life.

The isolation of this principle is a story of long nights, closed laboratory doors, and the human mind confronted with a perfect dilemma. The adrenal principle is both a phenol and an amine. Acid will throw a phenol out of solution—good; but acid is exactly what keeps an amine in solution. On the other hand, where an alkaline precipitates amine, it dissolves phenol. Since the chemist must work with either an acid or an alkaline, impalement on one horn or the other seemed at first certain. Dr. Takamine, able matador, had the simple idea of using a reagent (ammonia water) of such mild alkalinity that, while the amine was precipitated, the phenol was not dissolved.

The epinephrine molecule has twenty-six atoms, its formula is $C_9H_{13}O_3N$, it can be made synthetically, but Parke, Davis uses the actual glands of 12,000 cattle to make one pound of adrenalin crystals.

IV—Insulin

Almost as remote as the Greek Islands of the Blessed are the "islands" in the pancreas gland, a digestive gland located behind the stomach. For 238 years men sought the secret of the islands—insulin. The voyage actually started in 1683 when Conrad von Brunner removed the pancreas from a dog and observed symptoms which we now know to be those of diabetes. About 1870 the islands, like small globules of oil, were first seen by Langerhans, for whom they are named. Many explored them and even obtained impure insulin secretions from them, but they were never fully claimed until 1921, when Dr. F. G. Banting and his associates of the University of Toronto obtained the pure insulin which they supply.

Man lives in the balance of many metaphorical scales, but of them all none is more precarious and none less metaphorical than his use of sugar. The secretions from the islands of Langerhans enable him to oxidize eaten sugar, which is stored up in the liver and muscles. In the illness known as *diabetes mellitus* the islands do not secrete, wherefore sufficient sugar is not oxidized, remains in the blood, and is wasted through the urine. But the diabetic patient lives between a Scylla of sugar and a Charybdis of insulin. If he does not take enough insulin, he will die of too much sugar; if he does not eat enough sugar, the insulin which he is injecting into himself twice a day will rapidly burn up whatever sugar is in his system. This latter situation is called hypoglycemia and is as devastating as the former, causing uneasiness, convulsions, helplessness, coma, and sometimes death. Therefore in severe cases it is not only necessary for the diabetic to take an injection of insulin before meals, but he must also calculate very exactly the amount of sugar he is going to eat.

Unlike most great discoveries, this one of Banting's was accepted by the medical profession almost from the day when its announcement threw the scientific world into sedate confusion. As its discoverers have consistently asserted, it is not a cure for diabetes, but a substitute for the insulin that should be secreted from the pancreas. However, by resting the islands of Langerhans, it may assist them to recover their normal health and powers of secretion. Its use has increased the life span of the average diabetic about 100 per cent.

At one time there was a scare: it was said that there was not enough available pancreas in the world to supply the thousands of diabetics. Since then Banting and McLeod (his associate) have shown that there is enough in sight for all who need insulin, at a cost of from thirty cents to seventy-five cents a day. John D. Rockefeller Jr. has set aside a fund of $150,000, administered by Dr. Simon Flexner, to supply ward patients with insulin.

Dr. Banting and his associates gave the insulin patent to the University of Toronto, in whose laboratory the discovery was made. Sole license for its manufacture was at first given to Eli Lilly and Co. of Indianapolis; since then licenses have gone also to H. K. Mulford & Co. of Philadelphia, Frederick Stearns & Co. of Detroit, and to E. R. Squibb & Sons. Under the direction of Dr. J. A. Morrell (Squibb-discoverer of Amniotin), Insulin-Squibb is manufactured at New Brunswick. About 1,000 pounds of frozen pancreas glands from cattle (belly sweetbread) are run through a meat-chopper, collected into alcohol containing concentrated hydrochloric acid, stirred. The alcohol is removed in a vacuum still, the fat filtered out, and the residue, after five precipitations, appears as a mere 0.75 ounces of clear white insulin powder. This pigmy amount, however, is enough to enable the average diabetic to burn 2,200 pounds of sugar.

EDWARD ROBINSON SQUIBB
Founder of E. R. Squibb & Sons. In 1858 an ether explosion burned off the lower part of his eyelids. He could never completely close his eyes, slept with court-plaster over them.

The medicine business

The modern American medicine man is equipped with more forms of magic than were ever before devised. He has scrums for scarlet fever, diphtheria, erysipelas; vaccines for smallpox; pollen extracts for a dozen kinds of hay fever; extracts of glands; anæsthetics; vitamine products to compensate hasty diets; simples and chemicals of every description. Should we inquire where he gets these wonders, we would find that of all the firms who manufacture for him, Squibb, founded in 1858, and Parke, Davis, founded in 1866, stand out for their size and their pioneering services.

The materials that these firms manufacture are so precious to life that in Utopia they would be distributed through outlets as dignified as the modern jewelry store—but not in the U. S. Ethically unable to sell directly to the medical profession (except in the case of hospitals and laboratories) Parke, Davis and Squibb market their priceless fluids in a welter of cash register bells, toys, soda water, nostrums, and cut-rate displays. To a dark corner in the rear of the drug store is shunted the pharmacist, very possibly the only man in the place with a university degree; but even here the magic of the modern medicine man is hidden away, behind a mass of unholy patented hair remedies, cough syrups, tonics, elixirs; the shiny faces of Lydia Pinkham and Father John; the blatant claims of Swamproot (for the kidneys), Masculine, and Make-a-Man tablets—anathemas to scientists and to Parke, Davis and Squibb.

Although there are many drug stores of a higher class than the above, which either specialize in prescription work or take great pride in their prescription departments, the troubles of the legitimate pharmaceutical industry are not confined to its outlets. It is at the mercy of America's 150,000 doctors, about one-third of whom are members of the American Medical Association. Thus it happens that the sixteen members of the Council on Pharmacy and Chemistry of the A.M.A. have extraordinary industrial power, for with them lies the decision as to whether any product shall be listed in the A.M.A.'s *New and Non-Official Remedies*—a Who's Who of drug manufacturers and a What's What of drugs. There are federal and state drug laws aplenty, laying down, through the U. S. Pharmacopoeia and the National Formulary, certain minimum standards to which any drug on the market must conform. Squibb and Parke, Davis accept these laws as a matter of course; but their friendly coöperation with the Council located in Chicago is a fundamental business policy, and the goodwill of the Council is almost as important to them as the buying power of the public.

The sixteen members of the Council are paid no salaries, and their judgments are theoretically impartial. They appoint special referees for each product submitted to them, and the firm whose product is to be examined is not told the name of the referee. Their

[*Continued on page 110*]

Courtesy of W. & J. Sloane

THE PLEASURES OF THIS POMPEIAN PLUNGE ARE OFFERED TO HIS WINTERTIME GUESTS BY THE GENTLEMAN PICTURED BELOW

Keystone

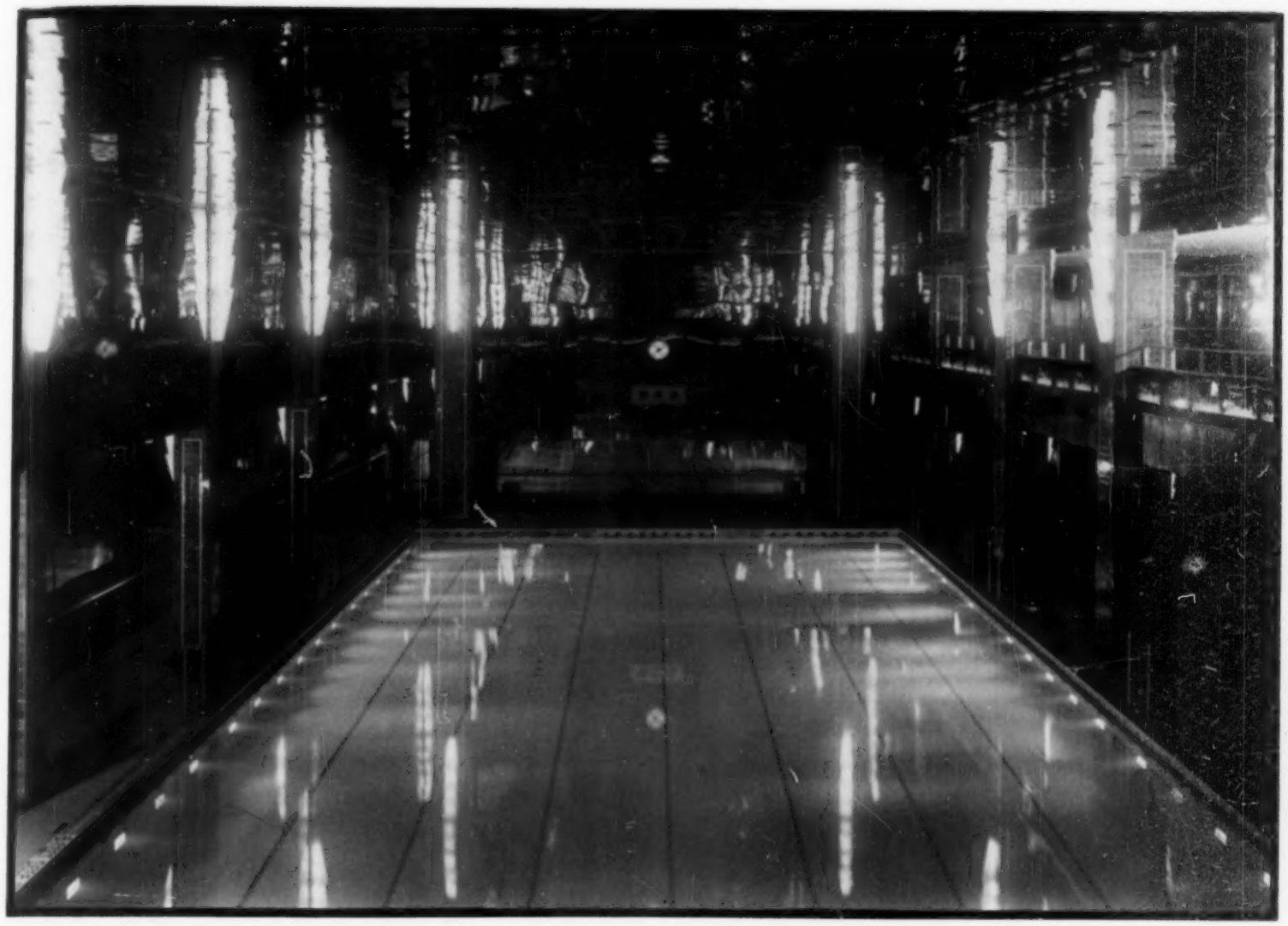
COLONEL HENRY HUDDLESTON ROGERS

Enchanted Tiles

Pogany's Brooklyn Caracalla and several private arenas for the cleanest of all sports.

WE MIGHT begin by saying that bathing places are indicative of states of civilization. But inasmuch as this is true of practically everything under the sun, there would be little use in the remark. And the corollaries are obvious: a primitive man bathes in some humble, natural brim; a civilized man amidst luxurious artifice (at many a "beach" club the chief attraction is a tiled pool). Therefore, in annotating the surrounding pictures of some of the country's notable swimming pools, we will relegate generalities to an imaginary footnote.

Beginning specifically, there is the private Pompeian bath which Colonel Henry Huddleston Rogers, of Standard Oil and railway repute, has caused to be built on his winter estate, The Port of Missing Men, in Southampton, Long Island. The modest pool (33′ 6″ x 45′ 6″) is approached from the Rogers' mansion through a 150-foot passage which is, in effect, a pathway into the past. For John Russell Pope, the architect, has provided the spacious chambers surrounding the pool with meticulous Doric contours, and LeRoy Daniel MacMorris has painted the walls with flushed Pompeian huntsmen and a graceful tangle of vines. The capricious, warm Pompeian decoration was chosen because it was thought that a severe Grecian treatment, in accordance with the architecture, would seem somewhat chilly in a wintertime rendez-



THE POOL OF BROOKLYN'S ST. GEORGE HOTEL, WHERE ONE DOLLAR BUYS ADMISSION TO A 168,000 GALLON LAGOON

WILLY POGANY, WHO DECORATED

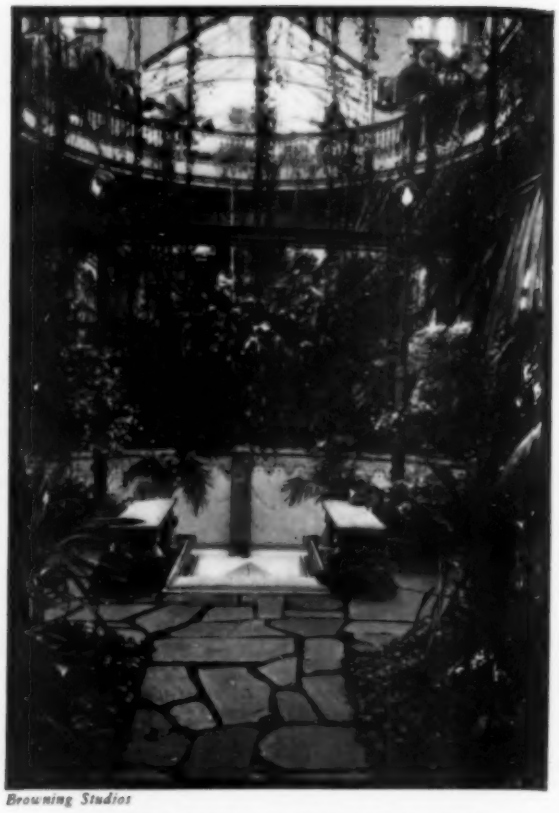
vous. Despite its relative informality, it is difficult to imagine anyone entering the Rogers pool in a bathing suit. It is a scene which demands at least a Classic tunic, if not Classic nudity. Colonel Rogers' Greek bas-reliefs adorn the walls, and over the plunge presides a replica of Edward Field Sanford Jr.'s shapely *Inspiration*, the original of which stands in the California State Library. It was this sizable, undraped figure which, when exhibited at the National Academy in New York, stirred two gentlemen of the Harvard Law School to correspondence with the New York Society for the Suppression of Vice. The vigilant John S. Sumner, leader of that earnest fraternity, denied that the statue disturbed him in any particular, and the sculptor remarked: "So many of my friends have called my work cold that this time I decided to do something warm. If some gentlemen think it 'hot,' they are reading into the statue more warmth than I put into it."

As modern as the Rogers pool is archæological, as accessible as the Rogers pool is restricted, is the vast natatorium (40′ x 120′) of the St. George Hotel in Brooklyn. It has given Brooklynites something to boast about

MARTIN SAMUELS, WHO CONCEIVED

American Encaustic Tiling Co. Ltd.

MR. MACK, OF MORAN & MACK, OWNS THIS POLYCHROME DAZZLER



Browning Studios

ARTHUR LOEW'S HEREDITARY JUNGLE

Mattie Edwards Hewitt

FROM THIS OUTER POOL YOU CAN SWIM . . .

Mattie Edwards Hewitt

. . . INTO THIS INNER GROTTO ON THE DEERING ESTATE IN MIAMI

after years of submission to Manhattan in the entertainment field. The St. George management challenges the public to discover anything like this $1,264,000 plant anywhere else in the country or, indeed, in history. As in the Rogers pool, there is submarine illumination—with 87,000 candlepower, delivered under water, the St. George tank is a glimmering, emerald lagoon. Around it Willy Pogany has raised burnished, rectilinear surfaces consisting largely of golden mirrors. The total mirror area is the greatest in the world; the entire water spectacle is reflected on the lofty ceiling.

Artesian wells 207 feet below the hotel furnish water half as salt as the sea at a temperature of forty-one degrees. The pumps deposit it, triple-filtered and quadruple-sterilized by ultra-violet rays, at a rate of 700 gallons a minute. Thus the water is completely changed every four hours. One dollar buys admission and rents a bathing suit.

The pool is part of an expansion scheme, the pet project of Martin Samuels, who rose from office boy to vice president at forty-five of Bing & Bing, Inc., New York real estate operators. It has served to draw attention to the fact that the St. George is now the second largest hotel in the country. With 2,632 rooms, it yields only to the Stevens Hotel in Chicago (3,000 rooms) and is 129 rooms up on its Manhattan rival, the New Yorker.

The enormous conservatories of Pembroke, estate of the late Marcus Loew at Glen Cove, Long Island, contain a circular pool surrounded by a synthetic jungle complete with pendulous vines and dank, odorous flora. There, even in the midst of northern winters, dangle coconuts and bananas. This was the conception of the original owner, the late Captain Joseph Raphael DeLamar, sailor, soldier of fortune, copper miner, capitalist, and organist who died in 1918, leaving $20,000,000 and innumerable Wall Street legends. It was his fancy to have a tiny grill work pavilion in the center of the pool, reached by a Lilliputian bridge. This has since been removed. But the vegetable matter is still cultivated by Marcus Loew's son Arthur, vice president and director of Loew's, Inc. and its Metro-Goldwyn subsidiaries, who inherited 15 per cent of his father's fortune, estimated at $50,000,000 and appraised at less than $900,000. Mr. Loew's wife, the daughter of Adolph Zukor, does not share Pembroke with her husband, from whom she has been estranged for more than a year.

Charles E. Mack, the originator, owner, chief money-maker, and torpid half of the the blackface act of Moran & Mack, has a pool at his home in Beverly Hills which exemplifies the exotic California tradition. Its glossy tiles are green and orange and black in designs suggestive of Navajo geometrics. Mr. Mack assures timid guests that, although the diving board is at the shallow end, there is no danger of their bumping their heads. The pool slopes away quickly, and all diving is in the direction of the deep end. This practice has proved so satisfactory for a small pool

[*Continued on page 126*]

American Encaustic Tiling Co. Ltd.

EARLE C. ANTHONY PREFERS AN UNUSUAL SHAPE IN TURQUOISE

Mattie Edwards Hewitt

RALPH PULITZER'S CLASSICISM

Bourke-White

DR. CHARLES BRIGGS' ANGLICISM

Underwood & Underwood

RUBBER

This story is told in three parts:

I— Outline of an individual (for the industry has happened in one life-time).

II— Rubber itself (to explain its presence on earth).

III— Four manufacturing companies (they are now two-thirds of the business).

Painted by G. P. A. Healy, Boston, 1808

Charles Goodyear (above) was a hardware merchant, not very successful, whose curiosity was aroused by the fact that rubber oozed in the summer and cracked in the winter. In 1837 he very nearly died from the fumes of nitric acid and rubber. Sulphur, he was certain, was the best bet, although it was quite by accident that he came upon the proper way to treat rubber with sulphur. When explaining something to a friend in his laboratory (which was his kitchen), gesticulating with his hand full of rubber and sulphur, he dropped the mixture on the kitchen stove. The result was a material still resilient, but not susceptible to the January weather outside, nor to the hot atmosphere of the kitchen. He called the process vulcanization after the god. He spent the rest of his life in expensive lawsuits which drove him to prison for debt. Daniel Webster defended him in a successful patent case. In 1855 he was in a Paris jail for debt. His French company had collapsed. In debt $191,000, he died in New York in 1860. His name is used by the Goodyear Tire & Rubber Company and hundreds of stores selling galoshes, raincoats, and rubbers in the U. S.

Firestone's President

Is the same Harvey Firestone who happened to have the only rubber-tired buggy in Detroit.

ONCE upon a time a man sat down and wrote about a company. He told of the foundation and early years of the company and of its steady growth. Then he told of war inflation and of post-War prosperity and pictured in sharpest detail the many absurdities into which the company was betrayed by the boom time of 1918-20. He was amused by a system of inter-office correspondence which became so complicated that the many vice presidents and their many assistants could not keep up with their intra-mural mail, so that a special inter-office telegram on bright red paper was devised for really important messages. He laughed at a great super house-organ, sold to dealers for five cents, costing the company from ten cents to twenty cents to publish, reaching a circulation of a million a year, yet worth not a nickel in advertising performance. And, finally, he pictured the president of this company as a man who had built in Ohio a house much larger than he needed, had then built another house in Florida, and who—on the eve of the 1921 deflation which almost toppled his company into bankruptcy—was vacationing in Europe, having succumbed to the prevailing theory that it was a reflection upon an executive's standing as such to be caught within a thousand miles of his business.

This company was the Firestone Tire & Rubber Co. of Akron. And the man who was writing about it was Harvey S. Firestone.

It is not a usual thing for a man so to satirize his business and himself. And it was particularly difficult for a man in the rubber industry to regard himself with humor and perspective. The rubber industry is today chiefly an auto tire industry. It has been so, however, for less than twenty-five years, and into those twenty-five years it has crowded a fantastic history of expansion and a remarkable number of mistakes. Mr. Firestone has gathered a considerable portion of the profits (the industry *as a whole* having made little or nothing), and he has, he admits, made some of the errors. He remains not only an enormous success, but also the only man living who has run a tire business from the dawn of the industry to its present day.

* * *

After an unfortunate experience selling patent medicines in Ohio, the state of his nativity, Harvey Firestone found himself, in 1895, a buggy salesman in Detroit. He knew horses and had a good pair. Also, his buggy had rubber tires. And they were the only rubber tires in the entire city of Detroit. This was calculated to make him popular with the *fin de siècle* girls, one of whom became his wife. But it was not until after his marriage that it suddenly occurred to Mr. Firestone that the rubber tires were something more than a slight social asset; that they were, in fact, his future.

With $1,000 savings, Mr. Firestone and a partner bought a run-down factory on Wabash Avenue at Harrison Street, Chicago. There was practically no machinery. The partners bought their tires in strips like garden hose (only solid); they cut the strips to fit buggy wheels and cemented the ends together. The Firestones' personal grocery bills were $20 a month, rent $25. Mr. Firestone now reflects on the simple life but, says he: "There is no going back—except as a broken man." The buggy tire business grew. Everything was simple except the finances, which continually worried him. He knew nothing about borrowing money from a bank. (How many tens of millions he has since borrowed and repaid and borrowed and repaid again.) One bank was nasty to him. But at another bank there was a patient, sympathizing young man. It happened to be Frank O. Wetmore, now well-known chairman of one

of Chicago's great financial institutions, the First National Bank.

That was the era of the goblin-headed trust. One of these, called the Consolidated Company, made a pass at monopolizing the rubber business (without the slightest idea that there was such a thing as an automobile). In the course of its gobbling, it paid a fancy price for Firestone's still-little business, and Firestone got out with a fortune. To be exact, with $45,000.

"I had the capital, but I did not have an idea." People told him he was crazy to want an idea. He could retire at thirty-two. The big idea of those days was to get out of business as soon as you had made or stolen enough to get out with. But a Mr. Sweinhart of Akron did have another idea. It concerned a better way to fasten tires (which were actually becoming popular) to buggies. To exploit the Sweinhart Clincher, there was formed on August 3, 1900, the Firestone Tire & Rubber Co. One of the early problems concerned the advisability of employing at $5.00 a week a stenographer, in addition to the one the company already had. The new employee, Miss V. M. Greer, became Firestone cashier.

Today, Mr. Firestone's general offices in Akron bear an unmistakable resemblance to Mr. Ford's. Other evidences of a famous friendship are the Firestone family's fleet of Lincolns and Mr. Firestone's tri-motored Ford plane. The connection began in 1905 when Mr. Firestone personally sold Mr. Ford 2,000 sets of tires for $55 a set against competitors' prices of $70. Mr. Firestone now doubts whether the order would have been given or taken if either "had really known anything" about pneumatic tires. In the previous year Mr. Firestone had taken his first auto ride, doing sixty miles from Akron to his old homestead in eight hours and innumerable punctures. However, when Mr. Firestone sold Mr. Ford the tires, Mr. Ford sold Mr. Firestone the proposition that the motor car was a means of transportation. From then on the business history of these two friends is about as different as possible, except that both achieved enormous success. And the principal difference is finance. It was hardly ever necessary for Mr. Ford to borrow money or sell stocks, an occupation which Mr. Firestone rarely escaped.

Take, for example, the year 1920. In the previous year the Firestone company had made $9,000,000 profit. Its assets were $70,000,000. It had borrowed $35,000,000 from the banks, but that was supposed to be shrewd because it was thought that whoever could get the most rubber and cotton fabric (at any price) would get the most tire business. Demand was ceaseless. In May, Mr. Firestone went to Europe, having rented a house in England. In July he began to get cables. He paid little attention to them. He got more. He sailed home. At lunch in New York his managers told him the worst. They now owed the banks $43,000,000 and could borrow no more. Sales had stopped. No money was coming in. They arrived in Akron on Friday. Mr. Firestone went out to his old homestead to think. On Monday he began to act. "The factory," said he, "was piled to the roof with unsold tires. Therefore we reduced our prices 25 per cent . . . It was a fire sale for the first time in our history. We thrust aside all our dignity. We plastered the country . . . In September and October we sold $18,000,000 worth of tires. That carried us out of the woods." But that was not all. And here is where the genuine captivating Firestone touch comes in. Mr. Firestone began not a fire sale, but a wholesale firing of bunk. He became again his own sales manager. Mr. Firestone found that organization, with its consequent delegation of authority, was necessary to big business, but the less of it the better. He thinks of 1920, when he again took personal command, as the real birthday of his gigantic enterprise.

The $45,000 "fortune" which Harvey Firestone sank so unnecessarily into the tire business has had millions of new capital added to it, and has become two tremendous plants in Akron, capable of making 16,500,000 tires a year; a plant at Los Angeles costing $5,000,000 and capable of 4,500,000 tires; textile plants in New England capable of producing 40,000,000 pounds of tire fabric; beautiful One-Stop Master Service Stations scattered about the country; a large staff of rubber buyers in Singapore (housed in Firestone Park of Singapore); thousands of employees of whom many live in Firestone Park of Akron; a million acres in Liberia, of

Courtesy Goodyear Tire & Rubber Co.

The Goodyear "Dock" near Akron, one of the most spectacular spots in the U. S.

Ewing Galloway

To earn his keep, plus the $60 paid for his services for three years, the native must tap six hours a day.

which only 55,000 have been planted with rubber trees; the sum total doing an annual business of $150,000,000.

* * *

Such sheer mass is characteristic of all modern business. We are continually confronted with the spectacle of Industrial Pelion piled on cosmic Ossa. But we shall misunderstand the tire business if we sit high in a Wall Street tower and inspect merely the gigantic statistics. For the true boundaries of the tire business have been the lives of individual men, and principally of a few men in Akron who have seen their city's name and their own names lengthen across the world. Far from being wizards of finance playing deftly upon the strings of economics or manipulation, they were continually arguing with their banks in Cleveland or New York. Far from being engineering geniuses, they did not even install the simplest conveyor

[*Continued on page 142*]

Rubber: A Gift to America

Resulting from the most dramatic change in the agronomy of the globe. Its cost of production.

THE relation between Nature and Industry is too little understood. There is a notion that Nature suffers the atrocities of Industry's mercenaries and retreats to a point of extermination. We think of the buffalo. But we forget the cow.

Actually, if Nature is the everlasting she, then Industry is the most virile husband she has ever known. It has multiplied the udder of the cow. But of its gigantic and profligate courtship, the most curious result is Rubber.

During the last ten years, five hundred million tires (500,000,000) have been made for the American people. They have been made *without profit*. The principal reason is that tire manufacturers have habitually gambled that Nature could not keep up with Industry, and they have habitually been wrong. If we could say that for the next ten years a pound of rubber would never cost more than twenty-five cents, then we could go a long way toward saying that hereafter the tires made for the American people will be made *with profit*. At any rate, we can demonstrate that the future of rubber will differ radically from its past.

The rubber tree which gave the latex which gave the rubber which gave the tire which alone made it possible for the first Ford car to proceed at twenty miles an hour without falling to pieces is, in all probability, still standing. No one knows how long a rubber tree will live, but certainly fifty years. The Ford tree is standing deep in a Brazilian jungle off the River Amazon. It is full of latex, for which it has no use. Latex is not a sap. Though it looks almost exactly like milk, it performs no known biological function except to hasten the healing of a wound in the bark. But in twenty years no harm has come to the Ford tree's bark. A wildcat may have scratched it. But knives have not touched it. For Brazil lost the rubber business of the world at the precise moment when rubber took rank with the few all-important commodities of the Modern World.

Among other reasons, this was due to Brazilian complacency and to a wandering gentleman named Wickham who died two years ago at a ripe old age and who closely resembled Hollywood's idea of an Anglo-Indian turned agile botanist. He noted that rubber trees have seeds. It is almost impossible to overlook the fact that rubber trees have seeds. The pods pop with a loud report, catapulting the seeds to a considerable distance. Sir Henry—for he was eventually knighted by King George and given £1,000 and an annuity by British rubber planters and American manufacturers—wrote a book about this popping and dispatched it to a learned man, Sir Joseph Hooker, director of the Royal Botanical Gardens at Kew. It was not the lilacs that were troubling Sir Joseph, but the state of the coffee tree in India and Ceylon, where a bug had literally demolished the trees from which the world derived nearly all its coffee. That was about 1875. Free from bugs, Brazil was starting to grow coffee. If Brazil could raise coffee as well as rubber, why should not Ceylon raise rubber, now that its coffee plantations were ruined? There was no reason except that to transport rubber seeds across the ocean without spoiling was almost impossible. Besides which, it was against the law. But at Sir Joseph's command, Sir Henry outwitted both Nature and the Brazilian Government and got a shipment of seedlings to Kew. A few months later, on August 12, 1876, several thousand seedlings were shipped in care of a gardener from Kew to Ceylon. Thus began the most colossal transfer in the agronomy of the globe, for today most coffee comes from Brazil and, broadly speaking, all rubber from the Asian tropics.

The impregnation of the Asian tropics with the seeds of rubber had nothing to do with ultimate destiny. It was all-unconscious prophecy. The ultimate destiny of rubber was Detroit and Akron, mean towns which had never been heard of by the men and governments who fifty years ago hoped that rubber might recompense Ceylon for its bug-ruined coffee. Nevertheless the significance of that triple play (Amazon-to-Kew-to-Ceylon) lies in the fact that it established rubber in the only place in the world where enough rubber could be produced to fill the needs of the Automotive Age. And that fact is today the cardinal fact about rubber.

To see why this is so, it is necessary to look at the geography of the Middle East. Anyone but a rubber man would call it the Far East, but a rubberman knows his East, and since Hongkong is 750 miles easter than Singapore, he puts Singapore in the Middle East. The Middle East includes the Malay Peninsula (and Burma on the north), Java, Sumatra, Borneo, Indo-China, and (1,500 miles nearer England) Ceylon. This area is in the one and only rubber isothermal zone. But its uniqueness really arises from its combination of climate and population. To the production of rubber, vast quantities of labor are even more essential than climate, for the climate might conceivably be manufactured. Not only is this labor abundant in the Middle

William Thompson

Rubber, once a wild, is now a domesticated substance. While coffee migrated from east to west and established itself in Brazil, rubber moved from west to east to the one place where there is labor of the necessary kind and quantity, in reach of the teeming populace of India, China, and Java. These pictures show: (left) the jungles which must be cleared before rubber trees are planted in groves; (below) pumping liquid latex from ship to tank-car in New York. An increasing amount of rubber is handled in this way.

East, but it is supplemented by the world's greatest labor reservoirs—400,000,000 people in China, 320,000,000 in India on top of 36,000,000 in Java alone, all workable for practically nothing a day.

Best available estimates indicate there are some 7,000,000 acres of rubber trees (acreage greater than the total area of New Jersey and Delaware). There may be as many as 500,000 owners of these 7,000,000 acres, for some of the native "plantations" are less than an acre in size. Roughly speaking, about half the acreage is owned by natives and half by foreigners. And roughly speaking, the planted area is about 50 per cent in British territory, 40 per cent in Dutch. The acreage:

British Malaya	2,700,000
British Borneo	300,000
British India and Burma	165,000
British Ceylon	535,000
	3,700,000
Dutch East Indies	2,900,000
Indo-China (French)	250,000
Siam	150,000
	7,000,000

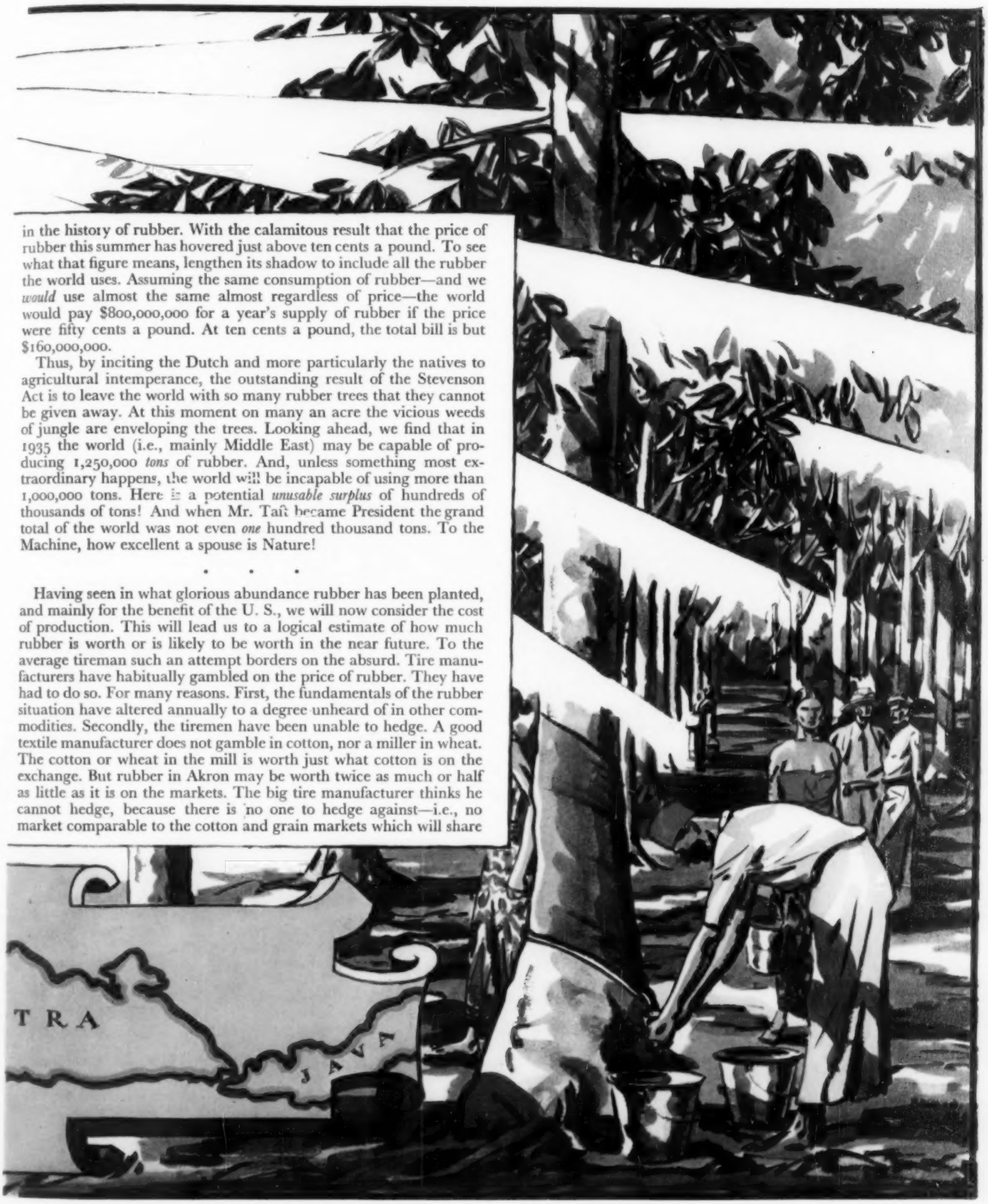
It costs something less than $500 to clear out an acre of jungle, plant it with trees, keep them weeded for five or six years until they are ready to tap. Obviously so great an expense and so long a wait was never undertaken without prospects of large profits. In 1910 there was practically no plantation rubber in the world. The price of rubber, most of it coming from the wilds of the Amazon, was nearly $3.00 a pound. The automobile had arrived, and the demand seemed insatiable for decades to come. Even if the price should go down to $1.00 a pound, the prospect seemed golden. The yield from an acre may be about 500 pounds. If 500 pounds brought $500, you could deduct $60 for cost of farming and still have an annual profit of $440 on an investment of $500. It was Bonanza, and British capital, always courageous, was quick to flow in that direction. So, as fast and

Rubber in one of the forms in which Akron sees it.

furiously as tropic life permits, the British planted up and down the Malay states. They planted so much, and Nature responded so handsomely despite disease and windstorm (rubber trees have shallow roots) that in 1920 there was enough rubber for all the world's needs, even though those needs had doubled and redoubled in the interim.

The price of rubber which had been planted to yield $1.00 a pound was fifty-five cents a pound on January 1, 1920. Even that price yielded a handsome profit. But on December 31 of that same year the price of rubber was sixteen cents. That was ruin. The British had to do something. They had a $1,000,000,000 of capital to protect. If the price stayed down at these pinch-penny levels, hundreds of millions of dollars would revert to jungle. So, in 1922 the British Government took command and, by the famed Stevenson Act, restricted the amount of rubber that could be exported from British possessions. The price of rubber went up.

Exactly why the Stevenson Act failed to work salvation for Malayan planters is explained in the *Appendix* (page 144). What concerns us here is the presence of 7,000,000 acres of rubber trees where there was scarcely a single tree when most of us were born. The failure of the Stevenson Act and the fact there are seven instead of only five or six million acres in the Middle East are both due primarily to the Dutch and the natives. In the Middle East the British have the Dutch for neighbors across channels of water just as they do in Europe. Ever since 1910 there had been considerable planting in those islands, great, glamorous Dutch islands, Java, and Sumatra. In fact it is in Dutch territory that the greatest American development is found. (U. S. Rubber, leader in history and size, has 104,000 acres in Dutch territory; Goodyear has 50,000. U. S. also has 30,000 acres in British Malaya and Goodyear 2,500 in the Philippines.) But until 1922 the rubber in Malaya was twice as much as in the Dutch East Indies. Now, however, there are more rubber trees in the Dutch Indies than in Malaya (the British retain their first position only because they have Ceylon, Burma, and Borneo besides Malaya). What happened, of course, was that instead of coöperating with the British to keep the price of rubber up, the Dutch saw chances of huge profits and proceeded to plant at a rate hitherto unparalleled

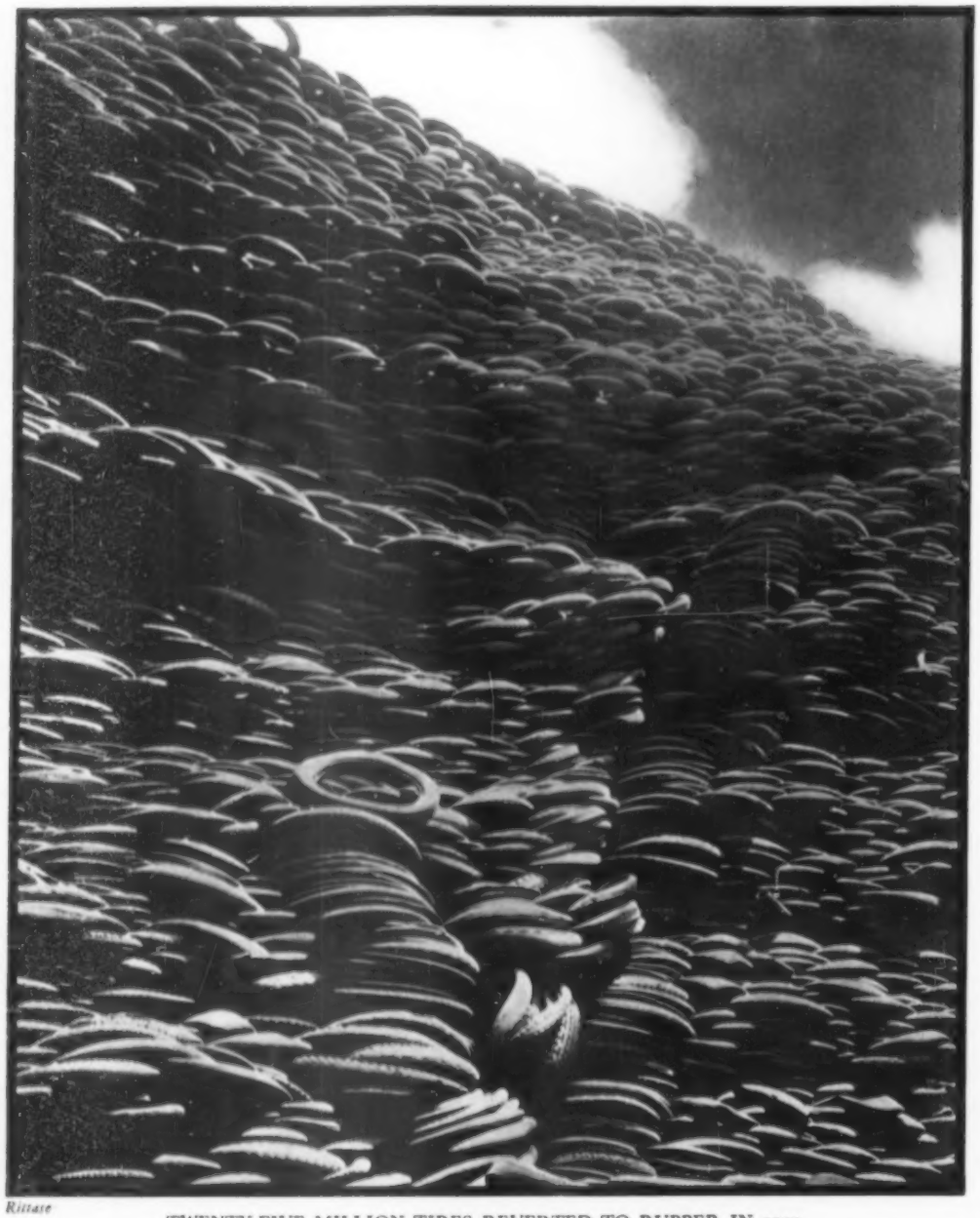


in the history of rubber. With the calamitous result that the price of rubber this summer has hovered just above ten cents a pound. To see what that figure means, lengthen its shadow to include all the rubber the world uses. Assuming the same consumption of rubber—and we *would* use almost the same almost regardless of price—the world would pay $800,000,000 for a year's supply of rubber if the price were fifty cents a pound. At ten cents a pound, the total bill is but $160,000,000.

Thus, by inciting the Dutch and more particularly the natives to agricultural intemperance, the outstanding result of the Stevenson Act is to leave the world with so many rubber trees that they cannot be given away. At this moment on many an acre the vicious weeds of jungle are enveloping the trees. Looking ahead, we find that in 1935 the world (i.e., mainly Middle East) may be capable of producing 1,250,000 *tons* of rubber. And, unless something most extraordinary happens, the world will be incapable of using more than 1,000,000 tons. Here is a potential *unusable surplus* of hundreds of thousands of tons! And when Mr. Taft became President the grand total of the world was not even *one* hundred thousand tons. To the Machine, how excellent a spouse is Nature!

• • •

Having seen in what glorious abundance rubber has been planted, and mainly for the benefit of the U. S., we will now consider the cost of production. This will lead us to a logical estimate of how much rubber is worth or is likely to be worth in the near future. To the average tireman such an attempt borders on the absurd. Tire manufacturers have habitually gambled on the price of rubber. They have had to do so. For many reasons. First, the fundamentals of the rubber situation have altered annually to a degree unheard of in other commodities. Secondly, the tiremen have been unable to hedge. A good textile manufacturer does not gamble in cotton, nor a miller in wheat. The cotton or wheat in the mill is worth just what cotton is on the exchange. But rubber in Akron may be worth twice as much or half as little as it is on the markets. The big tire manufacturer thinks he cannot hedge, because there is no one to hedge against—i.e., no market comparable to the cotton and grain markets which will share



Rittase

TWENTY-FIVE MILLION TIRES REVERTED TO RUBBER IN 1929

the risk and average off his gamble from day to day. That is his explanation, but it is only partly valid for the present in view of the fact there *is* an active rubber exchange in New York. In any case, there have been times when the tire manufacturer felt that to predict the price of rubber was equivalent to predicting the hole in which the roulette ball will fall, and he was forced to accept a speculation in a commodity over which he had no control. It is now possible that he is still too much under the spell of the frantic past. He may have difficulty in realizing that the future of rubber can and probably will be entirely different from its past—that future dating from approximately this year. In any case, even though the event may defy logic, the situation is worth examination.

In order to find out what rubber is worth, we begin by the assumption that it is worth the cost of production. By production in this case we mean simply and only the cost of getting the latex out of a full-grown tree, getting the rubber out of the latex, and shipping it to London or Akron. Nothing more—*nothing for depreciation on the acreage, no return on investment, no profit.* And we find this cost to average about thirteen cents a pound, whereas the market price has currently been well below eleven cents.

That is the cost for a large efficient plantation managed by Europeans. Such a plantation may have 15,000 acres. There will be a staff of only ten or twelve white men: a head man, three assistant superintendents (one for each 5,000 acres), an accountant and one or two other whites at the central office, an arboriculturist and perhaps another research man, a doctor, an engineer. They are apt to be a sturdy lot. In the case of U. S. Rubber and Goodyear, the men are hand-picked as to brains, health, and, above all, character. They are better married, for it is a simple matter of fact that the moral environment of the tropics cannot duplicate that of temperate zones. They find plantation life pleasant. They must not work too hard. They have droves of servants, automobiles, good roads, and one or two places to go. (In Malaya, the wives go frequently to Singapore.) Then there will also be upon this plantation some 3,000 or 4,000 natives—brownskins and black. They have been brought in shiploads from China or Java and have been elevated in the scale of civilization by the great business which brought them. Back in the native village, a man in the labor-business offered some young buck $10. The buck took it and the whole village celebrated for it meant for him a rise in life. If he is delivered to the plantation in good health, the Labor Agency gets $60. At every point he has been subjected to strictest medical tests, has slept in hospitals for the first time in his life. When finally approved he settles down to three years' work, if under Dutch control; under British control he may quit anytime. (Incidentally British are famed for patience with and care of their natives.) Usually he stays on indefinitely, for, after a preliminary period he gets 25 cents a day in addition to living conditions far better than he was born to. If he has a wife, he is given a hut in the married community. If not, he is put in the bachelor row where one woman quite easily takes care of three men. He works only about six hours a day—in the early morning, for only then does latex flow readily. Sometimes when he emerges from the vast groves with his gallon or two of latex he will encounter a white man with a great jar under his arm. As he and his fellows pass by in a line the white man will thrust into his hands a cup filled with liquid from the jar. It is quinine and water. A nasty drink. But since everyone is more or less infected with malaria, it is necessary.

To earn his keep plus the $60 paid for his services for three years, the native must tap six hours a day—in the early morning, 200 to 400 trees a day. This will yield from mature trees about 8 pounds of dry rubber.

The cost of rubber in cents per pound deposited in Akron is:

Head office expenses (London)	1.25
General estate expenses	2.25
Tapping costs	2.50
Transportation to ship	.40
Factory	2.00
Weeding	1.50
Ocean freight	2.00
Depreciation on machinery	1.00
Total	12.90

Of course, these cost figures differ enormously. For example, the same labor in tapping a five-year-old tree will result in less than one-third the rubber from the same labor on a ten-year-old tree. Thirteen cents is not so much an average as an efficient average. And be it noted that these costs are scarcely reducible. The labor is already

[*Continued on page 141*]

Four Giants: All Different

An attempt to visualize the rubber industry by means of a note on each.

EVERYONE understands that the movie business is very young. The first stars are living yet, no older and perhaps even younger than ourselves. If the business has committed the grossest sins of extravagance, if nearly as many fortunes have been lost in it as have been made, if its finance has sometimes been crazy and its method unethical, if its costs of distribution are even more wasteful than its costs of production, the explanations are quickly accepted.

Not only is the rubber tire business equally young, but it has passed through just as many fundamental changes as the movie business. Because its profits and consequently its securities have been extremely erratic, it has been subject to continual criticism. The defense of youth is equally valid but less obvious. It is the difference, perhaps, between a jury's reaction to a pretty girl and a husky longshoreman.

The movie business is presumably more difficult and intricate than the tire business. But also it is by no means so close to the economic heaven of stability as is the tire business today. The movies are perhaps by nature doomed to a perpetual youth. In the case of tires, the weight of evidence seems to show that youth, together with its major uncertainties, has passed.

There are today four rubber companies in the giant class. In order of their total 1929 sales they are:

Goodyear	$256,000,000
U. S. Rubber	193,000,000
Goodrich	164,500,000
Firestone	144,500,000

Last fall Goodrich absorbed Hood and last spring it absorbed Miller. If 1929 sales of these companies are consolidated, Goodrich just passes the $200,000,000 mark, and the total for the four companies comes to almost $800,000,000 out of a grand total of $1,250,000,000 for the entire industry. This year these four companies will account for a full two-thirds of America's rubber industry. Into these four we shall inquire.

No less important than the size of these four as a harbinger of stability is the elimination of literally hundreds of smaller companies which varied anywhere from "gyp" concerns to sizable affairs such as the aforementioned Hood or Miller. A third of the business still remains in smaller hands, but this percentage seems likely to decrease. Fisk is the fifth biggest company ($53,000,000 sales), and it has been losing big money for years, never having recovered from the rubber crisis of 1921. Many another company is facing the alternative of bankruptcy or absorption. Exceptions, of course, there are—and always will be. Notable are General and Lee, both profitably serving a high class trade, the former having increased rapidly to sales of about $25,000,000 a year and the latter holding a steady $10,000,000 plus at the town of Conshohocken, Pennsylvania, which it has made famous. Such firms as General and Lee are not sore spots in the industry. Content to merchandise a quality product, they have developed a clientele which they can hold without seriously upsetting the price structure of the industry.

The four giants are as different as any four giants could be in an almost identical environment. Three of them (Goodyear, Goodrich, Firestone) are Akron born and bred, and the same three have plants at Los Angeles. All four have been next door to bankruptcy at one time or another. All, at one time or another, have made huge profits. All of them are loaded with mortgages and/or preferred stocks. All have utmost confidence in the future, which is evidently shared by Cyrus Stephen Eaton, who has recently bought control of Goodyear and has a large interest in Goodrich and Firestone. There the similarity ends. As we shall see, the greatest difference is between the three Akronites and U. S. Rubber. But even between the two largest Akronites there is a vital difference in policy, for the guiding star of Goodyear is Transportation and the guiding star of Goodrich is Rubber. Goodrich says the best policy is obviously diversification, and consequently makes 32,000 *different* rubber articles. Goodyear says that the merits of this policy are by no means obvious and fastens its attention upon fastening rubber onto things that move.

1—Goodyear

In 1909, Goodyear made 100,000 tires, and last year it made more than 20,000,000. But that does not begin to tell the story. The tires Goodyear made in 1909 were good for twenty million miles; its 1929 tires were good for three hundred and fifty *billion* miles. That is the story. In 1909 the public's dollar (such few as were paid for tires) bought fifty miles worth of tire travel. In 1929, the dollar bought 1,000 miles. And that, too, is the story.

Most of this difference has come in 1920-30, not in 1910-20. For example, in 1920 one able-bodied man was lucky to make one tire

[*Continued on page 88*]

PAUL W. LITCHFIELD
PRESIDENT OF GOODYEAR

Bachrach

JAMES D. TEW
PRESIDENT OF GOODRICH

Underwood & Underwood

FRANCIS B. DAVIS JR.
PRESIDENT OF U. S. RUBBER

C. SLUSSER

Goodyear's Blimps and Zeppelins

ONE of the most spectacular spots in America is the Goodyear Dock, which resembles nothing so much as a young mountain in the middle of a plain surrounded by full-grown hills. The doors at each end are opened by running them along railroad tracks by the side of the structure. (The picture opposite shows a door half-open.) In this dock is being built for the U. S. Navy the world's largest airship —twice as big as the *Graf Zeppelin*, more than twice the *Los Angeles* size, and 35 per cent larger than Britain's *R-100* or *R-101*. Its cost is about $4,000,000, and it will be completed next year. It will have eight engines and ability to go 10,000 miles without refueling. It is known as *ZRS4*, and a sister ship, *SRS5*, is projected.

If Goodyear could make a dozen of these, the cost might well come down to $2,000,000. And at such a price regular transatlantic service is believed to be economic. At any rate, the International Zeppelin Transport Corp. (in which Goodyear has an interest) is keenly analyzing the possibilities.

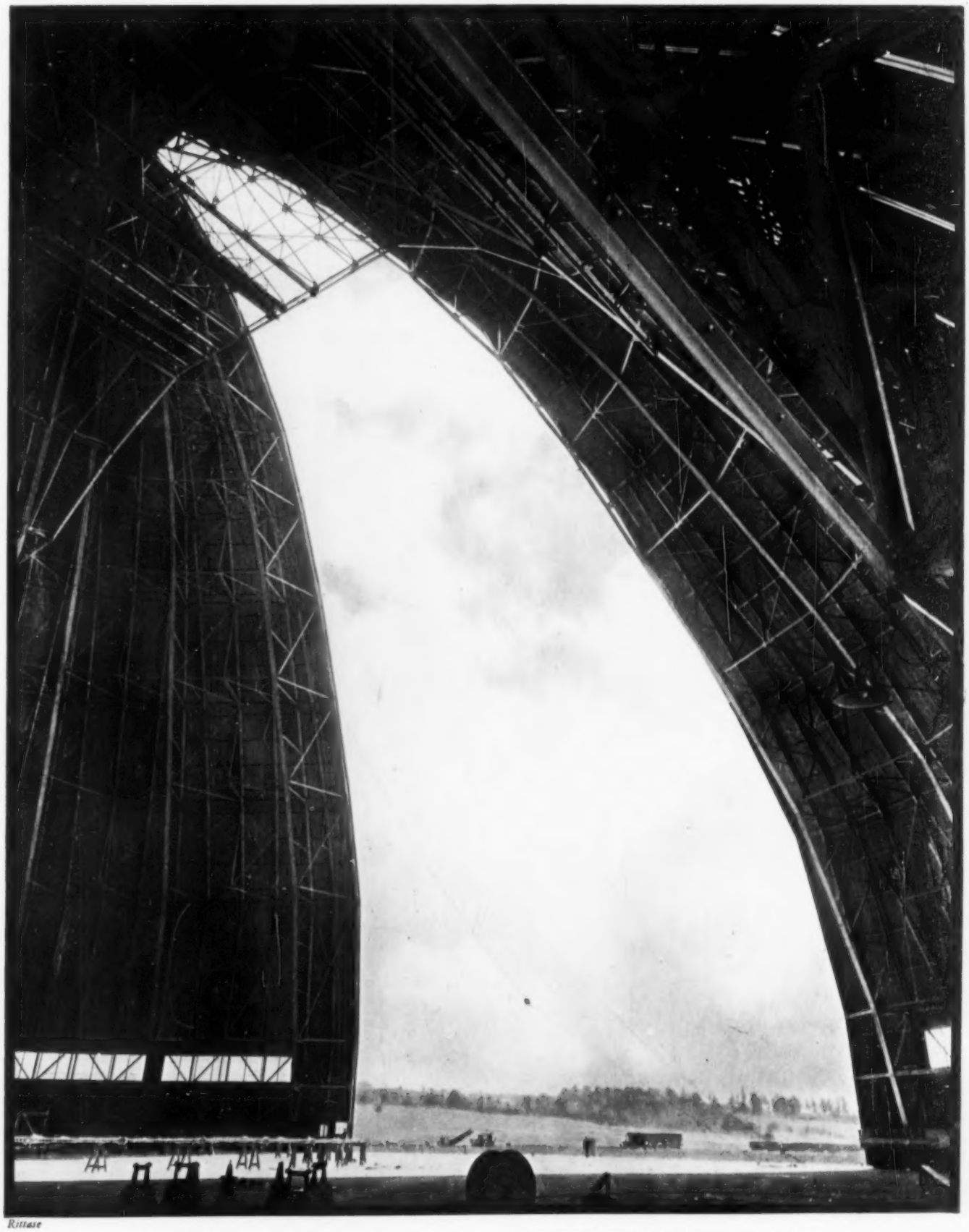
For years Goodyear has been building lighter-than-air craft. Its blimps, one of which you could buy for $40,000, are effectively used for Goodyear publicity. (Most dramatic lighter-than-air service was when 100 observation balloons went to war.) Goodyear executives (three of whom are pictured on this paper) love to take rides in them. They will go some fifty miles an hour, and if their engines should stall, no danger ensues.

A Zeppelin can do about eighty miles an hour and has this advantage over the much faster aeroplane: it *lifts* itself for driving purposes. Zeppelinites believe that the main long trade routes of the world will eventually be served by dirigibles, with aeroplanes acting as feeders from every direction. So far as dependability is concerned, dirigibles have attempted to cross the Atlantic seven times and have crossed it seven times.

P. E. H. LEROY

Bachrach

ROBERT S. WILSON



Rittase

MAMMOTH DOORS SWING OPEN TO ADMIT GOODYEAR'S SHIPS TO DOCK

in a day. Today, one man when hitched up to enough other men and to a lot of brand-new machinery can make five tires in a day, each of which will go three or four times as far as the tire of a decade ago.

Rubber might justly claim to be the most curious accident of Nature. It is soft, yielding, but, in one respect, many times tougher than steel. You cannot build rubber skyscrapers for the rubber would bend, but you can rub away steel where you cannot rub away rubber. Tires were originally made of rubber because rubber is soft. Now it turns out, as a beautiful surprise, that nothing is so tough. Rubber resists abrasion more than any available metal. Rubber would be preferable to steel for railroad wheels, except for cost and the fact that the flanges would break and the cars jump off the track.

But this toughness is not a quality of Nature. Rubber comes to Akron in bundles of various kinds of sheets. These bundles are put into a masticator which looks like a huge laundry-drying machine. It comes out of the masticator in a condition resembling thoroughly chewed chewing gum. In this state it goes to the mixer. And here great mysteries occur. The only secret in a rubber factory is what goes into the mixer along with the rubber. Different things in different combinations go in to make different kinds of treated rubber. But to make tough rubber, one thing is above all notable. And that is carbon black. Why carbon black (which is nothing but the soot accumulated after burning natural gas) should be the one thing which will make rubber supremely tough, nobody exactly knows. But it is. For every ten pounds of rubber in your tire, there are a couple of pounds of gas soot, and those couple of pounds make a difference of some 10,000 miles in your tire's mileage.

Every big company has contributed to the chemical improvement of Nature's rubber. Goodrich (*not* Goodyear) claims for its great George Oenslager the credit for the introduction of carbon black, the abrasion resister. And the companies divide the credit on the introduction of the even newer *age* resisters—complex coal tar derivatives which prevent rubber from deteriorating and which make it possible for you to store your car all winter without having to buy new tires next spring. The big advance in the early days (again, in large part creditable to Goodrich) was the shift from inorganic to organic accelerators to speed and improve the marriage of rubber and sulphur in vulcanization: such coal tar derivatives as diphenylguanidine and mercoptobenzothiazole reduced vulcanizing time from hours to minutes, with an obvious effect on plant efficiency.

The increase in tire mileage from 2,000 or 3,000 to 20,000 or 30,000 miles is an achievement which the great American companies share largely in common. We record it here because since 1916 Goodyear has made more tires than anyone else and today makes nearly twice as many as Firestone which, in the tire field, is No. 2.

The Seiberling brothers started the Goodyear business in 1898 with 176 employees, the characteristic tune of the times being:

> And you'd look so sweet
> Upon the seat
> Of a bicycle built for two.

The only connection with Mr. Goodyear was the purchase of the right to use his name. (Mr. Goodyear's heirs have profited little from his classic discovery.) The Seiberlings got out of the business when they had taken it to annual sales of $168,000,000 (20,000 employees and a profit in 1919 of $18,000,000), and when, along with other tire manufacturers, they had failed to foresee the calamities of 1921. The dramatic Goodyear debacle of that year and the subsequent years of Dillon, Read financing have nothing to do with the present, except that Goodyear has enjoyed the benefits of reorganization ever since, whereas some other companies postponed necessary readjustments.

CYRUS STEPHEN EATON

In recent years Otis & Co. of Cleveland has taken an outstanding position in the financing of rubber companies. Last year Mr. Firestone revamped the capitalization of his company with an issue of $60,000,000 of preferred stock, and recently Goodrich issued $30,000,000 of debentures. But to be a banker is one thing; to be a partner is another. This spring it became known that Mr. Eaton, outstanding Otis & Co. partner, had acquired control of Goodyear, the biggest tire manufacturer. Thus both by his public banking services and his personal investments Mr. Eaton practices his policy of supporting Ohio industries.

Today Goodyear, in sales and profits, is far out front. Its ambitions seem unbounded. It feels that it is, and is determined to become more than ever, the dominant provider of rubber-on-wheels.

This determination is best expressed in terms of a management team consisting of President Paul W. Litchfield and half a dozen others who, taken together, present an extraordinary impression of abundant vitality, combined with a sophisticated intelligence hitherto not always associated with factories. One of the team is "Cliff" Slusser, production vice president, who is physically a stocky, muscular, football type. Coat off, sleeves rolled up, he strides through the factory with the speed of a Roosevelt wearing out the diplomatic corps in Rock Creek Park. He has 16,000 men in his Akron plants alone and will bet anybody that he can call 5,000 of them by name. And anyone of the 16,000 can see him personally whenever he wants (about twenty a day come to him). As he strides through the factory miles he could, if he would stop, recount the complete mechanical reorganization of nearly every floor. When Litchfield put him in charge at Akron seven years ago, even the simplest elements of line production were lacking in many parts of the process. Tires were toted around by hand instead of put on a conveyor such as was commonplace in more highly developed industries. Only today does tire manufacture really approach mechanical perfection. As neat a mechanism as you will find anywhere is Slusser's automatic watch-timed vulcanizer for inner tubes. This is a series of twenty ovens, which are served by just one man: an oven opens, the man pulls out a vulcanized tube, puts in an unvulcanized tube, goes on to the next oven which opens automatically exactly as he arrives. It takes the man exactly eight minutes to go down the line, and each of the twenty ovens opens for him the second he arrives and closes the second he leaves. (On page 100 is a picture of a tube vulcanizing oven in the Goodyear plant which differs basically from others in that it is automatically timed—setting a good fast pace for the operator.) Due to its mechanical efficiency and to its huge volume, Goodyear is convinced that it can produce tires cheaper than anyone else. This, of course, is a debatable point, but the conviction is nevertheless fundamental to Goodyear's faith in its future.

Having produced tires, you must sell them. Or, it is far truer to say that if you can sell them, you will be given the privilege of producing them. For this purpose Robert Wilson is on the management team. The problem of tire sales will be discussed under Firestone, but here it can be said that Goodyear has great "public acceptance."

In the case of tires it is not enough to make and to sell them. The tire treasurer must be as smart as possible and then somewhat smarter. Such a treasurer Goodyear has in P. E. H. Leroy, who came from Wall Street. Goodyear is often, for better or for worse, the owner of crude rubber for which it has paid $30,000,000. If Goodyear has paid thirty cents a pound and the price thereafter drops to twenty cents, it is apparent that Goodyear's rubber is promptly worth $10,000,000 less than they paid for it. That means $10,000,000 deducted from profits at the year's end. But it may mean worse. For a drop in rubber prices is followed by a drop in tire prices which means that, on top of the inventory loss, the current receipts are less, so that the company may have to go to the bank

[*Continued on page 98*]

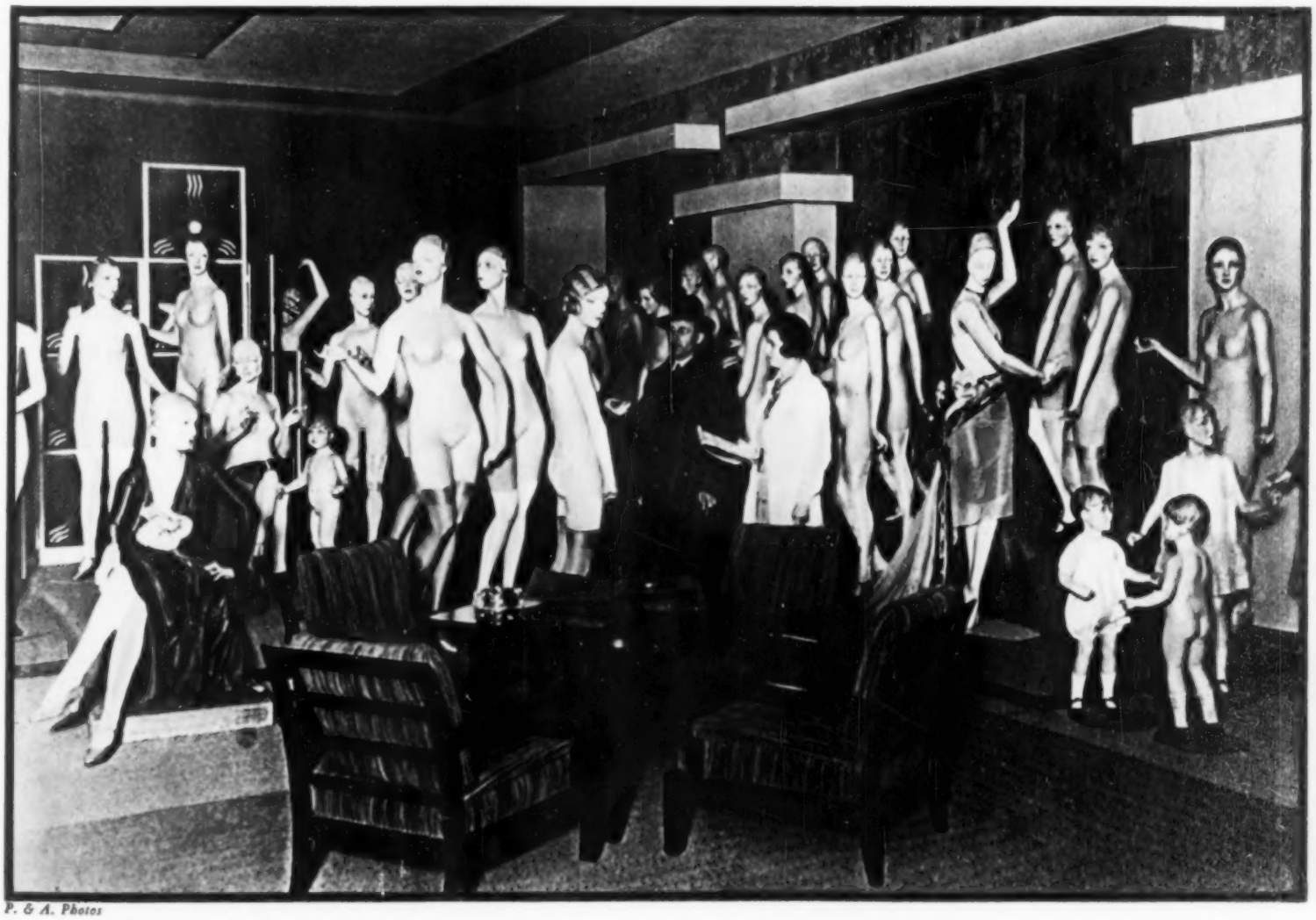
Model Women

Will hereafter be shapely. As femininity is reëstablished, some ladies discover the melancholy of anatomy. But many more exult.

ANY man who has kept his eyes open during the past year has been aware that the feminine figure is again receiving a fashionable emphasis. And not only the feminine figure, but femininity. In addition to pursuing the significant curves, the current styles exhibit such nuances of fabric and furbelow as have not been seen since the flouncy days before Irene Castle bobbed her hair and the Original Dixieland Jazz Band arrived at Reisenweber's with a species of pulsation which put the kibosh on the long skirt and its implications. But the long skirt is back, as is the murmurous music of Vallée and Reisman and Lombardo. A year ago, in fact, the streets were full of garish extremists who traipsed around in the most impractical shrouds, but the early stages of any great movement are always characterized by aberrations.

The movement has now attained a steady, discreet momentum; stylists have more of an idea what women want, as have women themselves. The curve of the hip, for instance, is regarded as desirable, whereas a bulging abdomen is held to be socially inconsiderate (a girdle will regulate both, in addition to defining the waist). And the skirt length which is so graceful and appropriate for the glistening ballroom is seen to be injudicious for the dusty streets. In short, the feverish period of revolution is over, and the new régime is being directed in the light of experience and reflection.

It would be a great mistake to suppose that the new mode has been forced upon women by the couturiers. That is not the way of the fashion world. The fact is that during the post-War years women concealed themselves beneath straight-line costumes, usually belted about the hips, and appealing to men chiefly by reason of a rash degree of abbreviation. As this style persisted, men grew practically insensible to the sight of knees and thighs, and women, not necessarily for this reason, grew tired of the mode which revealed them. Couturiers began catering to this fatigue. First, they offered length in evening attire; it was quickly accepted. Then, also in the evening, they moved the belt accent higher and higher toward the natural waist and began to follow the natural contours. Last fall's vagaries resulted from the sudden extension of this evening mode into the daytime. Properly



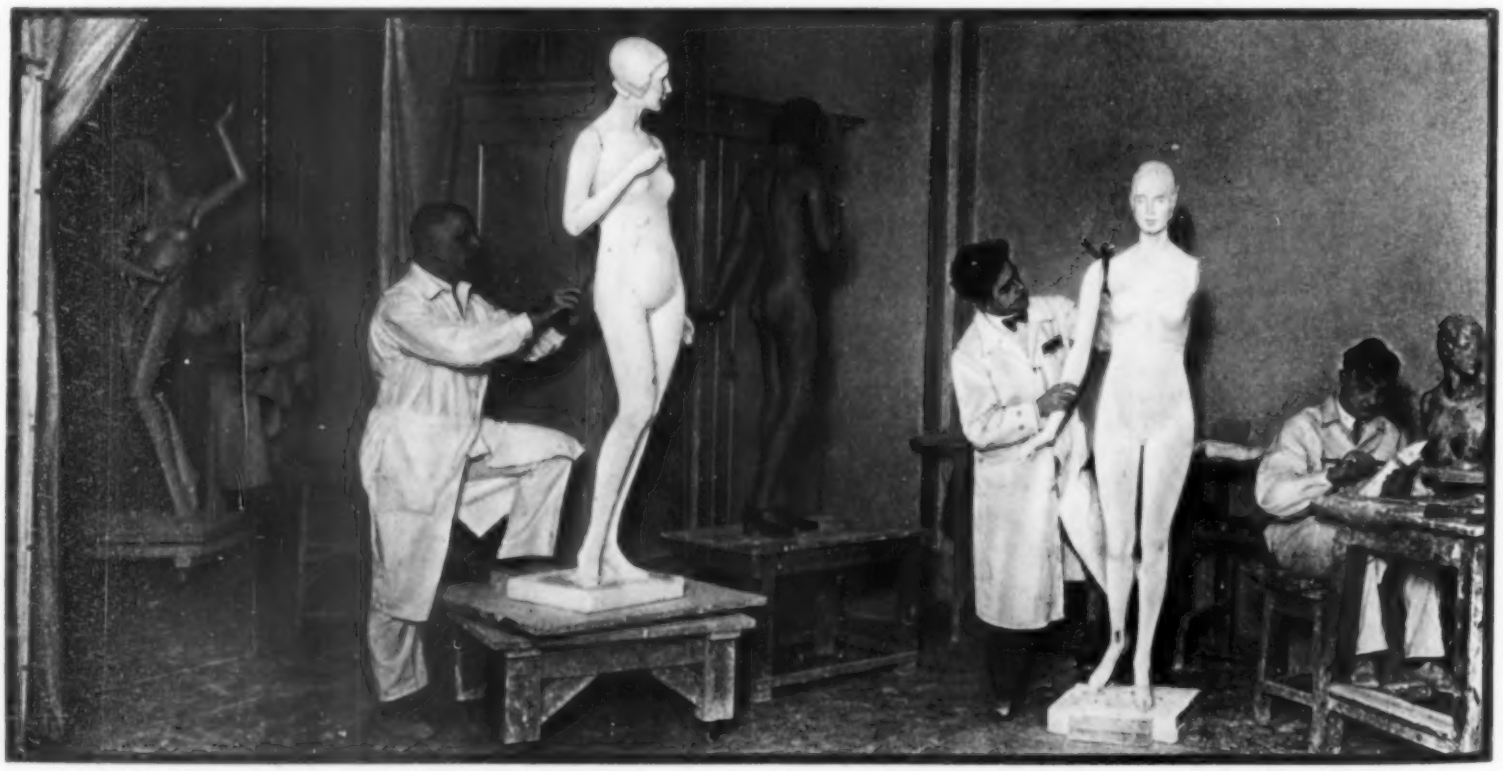
P. & A. Photos

modified, it has succeeded. Exposure is now in bad taste. And for men the interest lies elsewhere—in figures revealed by innuendos of fabric.

There are various concomitants of the new mode. One is the type of mannequin pictured in these pages. All that was necessary to exhibit the outmoded straight-line dress was a pair of shoulders from which it could be hung. Such a dress gained its interest not from its shape, which was simple and standardized, but from its colors or patterns, which could be observed in any type of display. But the present mode being a mode of shape—shape of the costume in general and of its component draperies in particular—you cannot demonstrate how a certain gown is swathed about the hips unless you have convenient hips. Hence the function of *papier-mâché* hips and *papier-mâché* whatnots. The anatomically explicit model is now used by such New York shops as Franklin Simon's, Lord & Taylor's, Stern's, Macy's, and such outlying emporiums as Loeser's and Namm's (Brooklyn), Bamberger's (Newark), Horne's (Pittsburgh), and Hudson's (Detroit). Its popularity is bound to increase. A footnote on its use has been provided by Amos Parrish & Co., vast and efficient New York bureau of fashion prophecy and information, which imported several European mannequins like those illustrated. It was discovered that they could not properly wear American clothes. American women, it appears, have broader, flatter figures than those of the Continent. Subsequently the European model-makers have studied and expertly reproduced the distinctive American anatomy.

In the wake of the new mode were a few objections. It eliminated the home dressmaker whose humble skill could not be expected to cope with the suave, intricate draperies in demand. It made some sort of corsetry almost inevitable. The dressmaker objection stands. The corsetry objection has been overcome by the elimination of whalebone and other uncomfortable elements from the corset. But the new mode was bound to please more than it offended. Only one sort of woman objects to it—she whose boyish figure is naturally straight-line, who has no hips, no waist, no bosom. And she is in a decided minority. On the other hand, the shapely woman is now in her element. The knock-kneed, bow-legged, or fat-legged woman applauds the mid-calf daytime skirts and evening gowns which just clear the floor. And short-legged women can obtain a semblance of limb length with long skirts and waist lines which may be placed as one wishes. Fashion's bugaboo, the fat lady, is certainly less appalling in a costume which constrains her opulence than in the loose drapes which used to magnify it.

Let us now suggest more specifically the course of fashion for the autumn and winter.



The casual, post-War manner of dress is definitely done. As woman's costumes move away from man's toward a pronounced femininity, formality increases. And with formality comes elegance. This is reflected by the predominant colors—dark tones for the day; white, off-white, "love" pink, and jewel tones for the night. And by the materials—sumptuous and rich, particularly in the evening. And by an elaboration of line and detail—side accents, crossed and wrapped effects, the use of fur as decoration. This intricate mode calls, by the laws of balance, for simplicity in accessories—hats, hose, handbags, shoes—which should all decoratively subserve the gown itself, in which the principal interest lies. In this period of formalism, women will require a greater variety of costumes, each adapted to its particular social purpose. Sportswear, for instance, will be strictly confined to sporting events.

The historic, high-waisted styles which have greatly influenced the modern mode—Victorian, Empire, Greek—may be expected to continue in that service. Waists incline to be a trifle higher, and skirts a trifle longer. The uneven hem line, featured last fall, gives way to hem lines even either in actuality or effect. In general the treatment of the waist will tend to be simple, with emphasis placed upon the regions above or below. Among the emphatic devices are attached scarfs, shoulder capes, fichus, berthas, peplums, tunics, tiers, flounces, short trains for very formal evening wear. Contrasting colors and materials are favored for both daytime and evening.

Coats will be fitted, either bloused or caped, and as long as the dresses beneath them. Only in sporting coats will the three-quarter length be tolerated. Suits and blouses will be very important, the latter delicately hand-worked, often suggesting the celebrated peek-a-boo manifestation of a decade ago. As every woman knows, a blouse tucked inside a skirt is apt to be bunchy underneath the skirt top. Some smoothing influence is needed between blouse and skirt. Thus there is a bold faction among the stylists which advocates the return of the petticoat.

Clothes are often indicative of states of mind. Many speculative persons believe that a return to dignity and formalism in attire presages an accompanying return to statelier morals and manners. But anyone who has watched the modern woman adapt the long skirt to modern convenience finds it easy to predict that she will do likewise with her behavior.

The pictures on this and the adjoining pages are of mannequins designed to accommodate the modern mode which, for the first time since the War, emphasizes the natural figure. Those illustrated are German; similar mannequins will be increasingly observed in Europe and America.

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DANIEL WILLARD

Boris, Boston
PHILIP STOCKTON

Gessford
JAMES STRANGE ALEXANDER

P. & A.
EDWARD EUGENE LOOMIS

© Keystone
DAVID FRANKLIN HOUSTON

Blank-Stoller
GEORGE PEABODY GARDNER

© Keystone
EUGENE V. R. THAYER

WILLIAM CAMERON FORBES

united institution. He is reputed to belong to more clubs than any other Bostonian, and probably to more directorates, including the boards of Gillette Safety Razor, Campbell Soup, General Electric, American Sugar Refining, and International Paper & Power.

Other Telephone New Englanders include Arthur Lyman, one-time mayor of Waltham and long a financial pillar for the Massachusetts Democratic Party (he was state treasurer in the campaign that carried Massachusetts for Alfred Emanuel Smith). Mr. Lyman married a Cabot, and his father married a Lowell. On his Waltham estate camellias blossom in February (here was built one of the first U. S. greenhouses), plows are still drawn by oxen, and there is an ancestral manor in which Washington and Lafayette are reputed to have slept.

There is also George Peabody Gardner, perhaps wealthiest of the Boston contingent. Mr. Gardner gave Boston its aquarium, and a boulevard in South Boston is named in his honor. He is seventy-five, owned Telephone stock even before the company moved to Manhattan, and still comes regularly to Telephone meetings. And not to be forgotten are Henry Saltonstall Howe, who is eighty-two and whose family was among the earliest Telephone investors, or Eugene V. R. Thayer, who was once president of the Chase Bank and is now chairman of the executive committee of the (Dawes) Central Trust Bank of Chicago. It is a long time since the New England group who furnished the early capital for the Yankee toy that Alexander Graham Bell invented at Boston, Massachusetts, have controlled the Telephone company, but many an able son of an able father has continued its influence.

The difficulty of drawing hard and fast Telephone classifications is illustrated by the fact that two of its most distinguished public servants are also New Englanders of the rockiest rib. They are Thomas Nelson Perkins and Jeremiah (Jere) Smith Jr. Mr. Perkins was counsel for the War Industries Board (of which Daniel Willard was chairman), later accompanied Colonel House to Europe, and served on many War and post-War commissions, acting as alternate for Owen D. Young on the commission which last year produced the Young Plan. He was a Fellow of Harvard at twenty-five (youngest ever), but frequently shocked the other Fellows by his slang and profanity, the late great President Eliot once asking to have some of his remarks repeated in the English language. He married a daughter of the late Charles Francis Adams, is a member of a Boston law firm to which Archibald Graustein of International Paper & Power also belongs, is chairman of the board of the Boston and Maine Railroad. He was best man at the wedding of Nicholas Longworth and Alice Roosevelt. He is a hero-worshiper with Owen D. Young as chief hero.

Jeremiah Smith Jr. is one of the few Democrats from New Hampshire and doubtless the only Telephone director who could not by any stretch of the imagination be considered a man of means. He was little heard of until, in 1924, the League of Nations having loaned (via the House of Morgan) $50,000,000 to bankrupt Hungary, put into his hands the administration of this money and made him complete dictator of Hungarian finances. In a two-year period Mr. Smith straightened out the terribly inflated financial structure of a poverty-stricken people, refused to accept a $100,000 salary to which he was entitled, told grateful Hungarians that "If you give me a decoration I will never forgive you," declined proffered degrees from Harvard and from Yale, and left Hungary with nearly half of the $50,000,000 still unspent. The $100,000 which he refused to accept is now being used as a scholarship fund to send picked Hungarians to American colleges.

From the Telephone standpoint Director Daniel Willard, great railroader, is considered primarily a great public servant. He was associated with Mr. Gifford on the Council of National Defense, and his telephone directorate is the only board position he holds apart from his railroad and banking activities. And Mr. Gifford, in turn, is associated with Mr. Willard as trustee of Johns Hopkins University. Other Telephone public servants are John W. Davis, one-time (1918-21) Ambassador to the Court of St. James's, and David Franklin Houston, Secretary first of Agriculture, then of the Treasury, in Mr. Wilson's cabinets. At the close of the Wilson administrations, Mr. Houston joined the Telephone company, heading the then (1921) newly formed securities company which has so successfully devoted itself to the wide distribution of Telephone stock. No longer a Telephone director, but certainly a public servant, is Owen J. Roberts, prosecutor of petroleum connivers, who resigned his Telephone position to join the U. S. Supreme Court.

As for the dominantly financial membership of the A. T. & T. board, George Fisher Baker is of course most representative. Many years ago, on Jekyl Island [FORTUNE, February, 1930], Mr. Baker used to gather around him a little group of men who symbolized all that was most powerful in American finance. That group (of which Mr. Baker is the lone survivor) included J. Pierpont Morgan, James Stillman, and James J. Hill. It also included Theodore N. Vail, the man who took the Telephone company when it was little more than a promise and only left it when it was a little less than a monopoly. To the present day the Telephone company and the U. S. Steel Corporation remain the companies in which Mr. Baker takes his most active interest although the New York Central and the Mutual Life are also strong claimants for his continued regard. Since 1924 Mr. George F. Baker Jr. has sat with his father on the Telephone board. James Strange Alexander, retired chairman of the board of the Guaranty Trust; Edward Eugene Loomis, of the Lehigh Railroad, Mr. Baker's most intimate friend; and Myron Charles Taylor, of U. S. Steel, are other great names which are great Telephone names as well.

Lone operating executives on the Telephone board are Vice President Charles Proctor Cooper and President Walter Sherman Gifford. Mr. Cooper, who rose from the New York Telephone Co. ranks to the presidency of the Ohio Bell Telephone Co., is chiefly an alternate for Mr. Gifford, representing the management in his superior's absence. The Telephone company has eleven vice presidents against eighteen directors, but purposely restricts its management directorate so as not to confuse the Board's position as an advisory council with that of a super-executive committee.

As for Mr. Gifford, it is difficult to consider him as a director without considering him as the president, yet any adequate consideration of this latter function should demand a separate and more extended treatment. Even if he were not a director *ex officio*, he exhibits the usual qualifications, for he was born in Salem, he graduated from Harvard (along with Clarence Dillon), and during the War ably supervised the handling of many millions of dollars in the purchase of government supplies. Familiar enough is the story of how, after his graduation (1905), he asked both General Electric of Schenectady and Western Electric of Chicago for jobs, put the General Electric letter in the Western Electric envelope, and vice versa, but got the Western Electric job anyhow and began his career at $10 a week. It was only twenty years later that he was Telephone president, at a salary reputed then to be $200,000 a year. Other men, however, have risen as rapidly as Mr. Gifford and from beginnings at least as humble. The most significant contribution that Mr. Gifford has made, not only to the Telephone company but to contemporary economic thought, has been his statement, already discussed under another heading (see page 38), concerning the profit policy of his company. This country is crowded with corporation presidents whose corporations are making a great deal of money. Even the $200,000,000 a year which Mr. Gifford's company makes can be partially explained on the theory that under our present system some company is bound to make $200,000,000 just as some company is bound to build a skyscraper with 100 stories. What is unusual, obviously, is the corporation sufficiently self-conscious and social-conscious to believe that the position of corporations as purely acquisitive mechanisms will probably become more and more questioned. In saying, at Dallas, that the Telephone company would return excess profits to the users of its service, Mr. Gifford raised a far-reaching and fundamental issue. Whether one considers that the operations of the Telephone company are a settlement of that issue is at present beside the point. For even the statement of the proposition is new and is significant. From a superficial standpoint, Mr. Gifford is perhaps most remarkable as head of our first $4,000,000,000 company. From a more basic standpoint, he is perhaps most remarkable as the man who made the Dallas speech.

The Sherman Act Operates Today

No less than in 1911, but more quietly. The peculiar Socony-Vacuum case. And the oft forgotten Clayton Act.

IN MARCH of the present year John D. Rockefeller got, from a rather technical standpoint, into court again. For a good many years now Mr. Rockefeller has been associated with philanthropy rather than petroleum. For a good many years the Standard Oil Company of New Jersey has been a great corporation rather than a great trust. Yet the case which is now before the District Court of the U. S. for the Eastern District of Missouri has been brought by the U. S. of America, petitioner, against the Standard Oil Company of New Jersey and others, defendants, and the arguments in the case revert to the arguments which, begun in November of 1906 and concluded in July of 1911, resulted in the dissolution of the great business by Mr. Rockefeller founded and fostered. For, according to the position taken by U. S., the ancient snake had been scotched but not killed and two of its severed fragments were moving toward a strong but unhealthy reunion. So the forces of the government were again arrayed against the old monopoly, and the attorneys of the government were setting out with the fervent intention of rehanging Danny Deever in the morning. But this time—significantly enough—it did not appear likely that Danny would be hanged, and—even more significantly—the public in general seemed only mildly interested in the proceedings. Anti-trust legislation—though never more vitally functioning, never more carefully regarded, than at the present time—has lost a good deal of the emotional appeal adhering to it in the days when Mr. Roosevelt was trust-busting. The Trial of 1930 is certainly not without a very considerable significance. But it will never arouse the passions engendered by the Trial of 1906.

It was in January, 1930, that there occurred the overt act through which the petroleum business became again accused of running counter to the law of the land. For on that date Herbert L. Pratt, chairman of Standard Oil Company of New York, and George P. Whaley, president of Vacuum Oil Company, agreed, subject to the approval of their stockholders, to a merger of their companies. Under the terms of this agreement, Standard of New York was to change its name to General Petroleum Corporation and Vacuum was to sell and convey to General its property, rights, privileges, and franchises, wherever situated, after which Vacuum was to commit corporate suicide and go into a complete and permanent dissolution. General was then to deliver to each Vacuum stockholder shares of General equal in umber to three times the number of shares of the capital stock of Vacuum held by such stockholder, except that any Vacuum stockholder not wishing to accept shares in General would instead receive in cash the value of his shares as determined by legal appraisal. It is important to notice that Standard of New York was not to buy an interest in or control of Vacuum stock, but that it was taking over the entire Vacuum assets and terminating the entire Vacuum life.

After the dissolution of Standard of New Jersey, the New York company, at first somewhat in the position of a head without a body, gradually integrated itself and now, through Texas and California subsidiaries, is a large producer, transporter, and refiner of petroleum products. Its principal product is Socony gasoline, sold in twenty-nine states, but chiefly in New York and New England. It has also a very large foreign business, shipping gasoline and kerosene to Japan, China, India, and the Far East in general. Its predecessor company—Charles Pratt & Co. of New York City—was famous even before Rockefeller, and in Charles M. Pratt (father of the present chairman) and Henry H. Rogers it contributed two of Mr. Rockefeller's most able lieutenants. In 1929, Standard of New York showed a net income of $38,750,849.

Vacuum made in 1929 nearly as much money—$35,767,627—as New York but on less than one-third the assets and capitalization and on a business specializing chiefly in high grade lubricants. The motorist who asks for New York's Socony gasoline is also likely to ask for Vacuum's Mobiloil, motor oil, distributed throughout the country, and Vacuum products are so well known abroad that Vacuum's foreign business is larger than its domestic. Vacuum ships lubricants to nearly every country in the world (Russia is the conspicuous exception); does also an extensive export business in kerosene and in gasoline, selling these products chiefly in Egypt, Africa, and Australia and not invading New York's Far Eastern sphere of influence. From its very beginning Vacuum (founded in 1866 by Hiram Everest) was interested in petroleum not as a fuel (kerosene) or a medicine (patent medicine laxatives), but as a lubricant, and unquestionably was the pioneer company in the replacing of animal fats with petroleum as the ideal material for greasing the nation's wheels. Mr. Everest sold his company to Mr. Rockefeller in 1879.

Such, very briefly, are the two companies which now wish to come together and which the government wishes to keep apart. The government's case depends almost entirely upon the dissolution decree of 1911. This decree, in addition to scattering Standard of New Jersey into its several components, furthermore provided:

> That the defendants . . . are prohibited from continuing or carrying into further effect the combination adjudged illegal hereby, and from entering or performing any like combination or conspiracy the effect of which is, or will be, to restrain commerce in petroleum . . .

Both New York and Vacuum were once wholly owned subsidiaries of Standard of New Jersey, competition between them unquestionably exists, and such competition would obviously disappear with the extinction of Vacuum. Therefore, argue government attorneys, the proposed merger is a violation of the 1911 decision and the government therefore prays that the honorable court will declare the tentative merger contract null and void.

But to this argument there is a rebuttal. The 1911 decision did not forbid Standard oil companies from entering into *any* combination. It did forbid their re-creating *the combination* (i.e., the old New Jersey monopoly) *adjudged illegal*. And it forbade them to enter any *like combination* which would result in a restraint of trade. A union of New York and of Vacuum is obviously not *the combination* that Mr. Rockefeller put together. The question becomes, therefore, whether the New York-Vacuum consolidation is *like* the dissolved trust, the resemblance depending upon the New York-Vacuum's capacities along the lines of restraining trade. In other words, then, the proposed New York-Vacuum merger must be convicted of a violation of the Sherman Act, just as the old Standard of New Jersey was convicted of being a violation of the Sherman Act; otherwise the fact that the companies concerned are former Standard companies is irrelevant.

And—argue attorneys for the defendants—the proposed combination can in no wise be regarded as even faintly resembling Mr. Rockefeller's fallen tower. The proportion of the petroleum industry that would be controlled by New York-Vacuum is very much smaller than the proportion of the steel business controlled by U. S. Steel Corp. or of the automobile business controlled by General Motors, and the proposed company would (unlike Steel and Motors) fall far short of being the largest unit in its field. Even in New York and New England, Socony stronghold, Socony's gasoline and kerosene business has shrunk from 85 per cent of the total in

a story in the *STARS*

Since the first year of this advertising agency's life, sixty per cent of its growth has come from new business given by *old* clients. During these six years, *every* client listed below who has had more than one account to give, has rewarded Young & Rubicam in this way. The stars tell the story.

August 1, 1923—The infant Agency of Young & Rubicam, a mere speck on the advertising seas, is entrusted with the advertising account of the Pennsylvania Grade Crude Oil Association.

December 15, 1923—The Postum Company attracts attention to the mere speck by placing with it the advertising of Postum—one of several Postum Company products.

June 21, 1924—The Black Flag Company widens the circle of Young & Rubicam clients.

September 5, 1924—A. G. Spalding & Bros.—having retained Young & Rubicam for a special merchandising study—decides to venture into the National Advertising field, with a modest campaign on Spalding Swimming Suits.

January 20, 1925—A new account—La France (for laundering)—comes in to start the new year right for the young Agency.

April 18, 1925—The Budd Wheel account joins the growing family.

★ May 1, 1925—The Swimming Suit venture having proved successful, Spalding decides to advertise Golf Balls, Golf Clubs, and Spalding Retail Stores.

★ May 20, 1925—The Postum Company—after watching the workings of Young & Rubicam service for 17 months—rewards the Agency with another Postum product—Grape-Nuts.

★ December 2, 1925—The E. G. Budd Mfg. Co. shows its satisfaction with the advertising of Budd Wheels, by retaining Young & Rubicam to extol the superiorities of Budd All-Steel Bodies.

★ June 22, 1926—Jell-O—the third Postum Company account—comes in.

August 20, 1926—The International Silver Company appoints Young & Rubicam to direct the advertising of the Sterling Silver Division.

★ September 15, 1926—Swans Down Cake Flour becomes a new product of the Postum Company and a new account of Young & Rubicam.

★ June 1, 1927—Wm. Rogers & Son—another member of the International Silver family—comes to Young & Rubicam.

June 2, 1927—Johnson & Johnson selects Young & Rubicam to give advertising first aid to the First-Aid Department.

July 25, 1927—Fels & Company chooses Young & Rubicam to tell the story of famous Fels-Naptha soap.

August 16, 1927—The Borden Company gives the advertising of Eagle Brand and other Condensed Milks to Young & Rubicam.

★ February 4, 1928—The service given to the Postum Company once more bears fruit. This time Sanka Coffee is the harvest.

★ October 29, 1928—Our first active account—the Pennsylvania Grade Crude Oil Association—makes a long and pleasant association even more pleasant by helping to lead a new account into the fold. Quaker State Oil Refining Company — a prominent member of the Association — is the new client.

November 15, 1928—Rolls-Royce becomes a client.

December 27, 1928—The Columbia Phonograph Company comes in.

★ January 1, 1929—Johnson & Johnson follows the lead of several other Young & Rubicam clients and brings another of its products to us for advertising and merchandising diagnosis and treatment. The newcomer is Johnson's Baby Powder.

★ March 6, 1929—Calumet Baking Powder becomes our *sixth* Postum account.

July 18, 1929—The Norwich Pharmacal Company entrusts the advertising of Unguentine and Swav Shaving Cream to Young & Rubicam.

★ July 24, 1929—The already large Postum family grows by one—Franklin Baker Coconut this time.

★ October 1, 1929—The Norwich Pharmacal Company asks Young & Rubicam to take over the advertising of two more of its products—Amolin and Pepto-Bismol.

★ January 2, 1930—The Postum Company (now General Foods Corporation) gives Young & Rubicam the privilege of telling the most romantic food story ever told—the story of Frosted Foods.

March 24, 1930—Julius Kayser & Company selects Young & Rubicam to tell the world about Kayser Stockings, Kayser Gloves, and what used to be unmentionables.

★ April 1, 1930—The Borden Company's Cream Cheese, Liederkranz Cheese, and Military Brand Cheeses come in to join the other members of the Borden family.

YOUNG & RUBICAM INC · ADVERTISING

NEW YORK · PHILADELPHIA

1911 to 34 per cent in 1929. Also, argue New York-Vacuum attorneys, New York and Vacuum are today more complementary than competitive. New York does most of its business at home; Vacuum does most of its business abroad. New York sells chiefly gasoline and Vacuum sells chiefly lubricants. Each has its foreign business in gasoline and kerosene, but each remains within the boundaries of its separate foreign territory. There is, to be sure, some competition between New York and Vacuum gasoline and between New York and Vacuum lubricants, but the elimination of this competition by no means constitutes that industrial restraint of trade visualized by the framers of the Sherman Act or realized by the old New Jersey Standard. Therefore, maintain the defendants, their union is certainly not comparable to the Rockefeller union and their proposed company can in no way be regarded as restraining, or as likely to restrain, the free flow of petroleum commerce. The companies also supply a legitimate reason for merging in that each would thereby have complete use of the other's distributing stations and that the exchange of marketing facilities would be of particular importance in enabling them to carry on their foreign trade in the face of strong foreign competition, especially from Sir Henri Deterding's Royal Dutch-Shell organization, which is the largest petroleum producer in the world.

Thus the clashing arguments and thus the issue involved. Rash, no doubt, would be prophecy concerning the outcome of a case which is still in the process of argument. But it is legitimate to point out that not only the dissolution of the old Rockefeller Trust but also the development of the motor car has tremendously expanded and decentralized the petroleum business. It is difficult to conceive of the New York-Vacuum combination as the dominating influence in petroleum, and the highly specialized nature of Vacuum's major interests does make a New York Vacuum combination considerably different from a merger between, for instance, New York Standard and Jersey Standard.

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The status of New York and of Vacuum as former New Jersey subsidiaries of course leaves them in an extremely specialized position as far as concerns the general problem of anti-trust legislation and its influence upon consolidations. There are, broadly speaking, two anti-trust measures into which a merger-planning company should carefully inquire. The first is the Sherman Act. The second is the Clayton Act. The Sherman Act forbids combinations, contracts, and conspiracies in restraint of trade. The Clayton Act forbids the purchase by one company of stock in (but not assets of) a competing company. Both in conception and in operation the acts are very different and a company might well flatly violate the one while entirely complying with the other.

The language of the Sherman Act is so broad (combination, contract, conspiracy) that it covers every form of corporate activity and the expression *restraint of trade* is also so general that every Sherman Act case has to be decided more on its particular facts than by reference to any previous decision. The critical point is what constitutes *restraint of trade*. A company does not necessarily restrain trade because it is a big company; at least, no company so far has been successfully prosecuted under the Sherman Act solely on the basis of corporate magnitude. When U. S. Steel, for instance, was attacked, there was no difficulty in showing that this corporation carried on 50 per cent of the country's steel business. But the Steel company was not convicted of having used unfair methods (such as price-fixing, rebates, etc.) in order to get its 50 per cent, or of using or intending to use unfair methods in order that the remaining 50 per cent might be secured. It is conceivable, of course, that a company could grow, however irreproachably, so big that its very size would constitute a menace. But no company has as yet reached such a size, the prosecution even of Standard of New Jersey itself having been based not on the growth of the company, but on the number and extent of the competitive corpses with which it had paved its road to supremacy. It is perhaps restraint of trade in the sense of *destruction of competition* with which the Sherman Act is most concerned; it implies a company both large enough and mean enough to bully its competitors out of existence. It deals not with the number or the size of corporations competing within an industry but with the existence and continuance of industrial competition. As far as the Sherman Act is concerned, the would-be mergerer should ask himself: does this consolidation enable me, actually or potentially, to destroy my competitors and thus eventually to monopolize my industry? If so, it will probably be considered illegal.

The Clayton Act, on the other hand, is pointed at that type of merger which eliminates competition between the merging companies, whether or not either of them is large enough to constitute, alone or together, a leading unit of its industry. Inasmuch as mergers ordinarily occur between companies in the same line of business, nearly all mergers *do eliminate* competition between the merging companies, and the Clayton Act at first glance looks like a blanket prohibition of the merging impulse. But it must be remembered that the Clayton Act does not say that Company A cannot *acquire* competing Company B; it only says that Company A may not *acquire stock* in competing Company B; and if Company A wants to buy the *assets* of Company B., which thereupon goes out of business entirely, the Clayton Act has not been trodden upon. The Act was really directed chiefly against holding companies and was sponsored by Woodrow Wilson, who saw in holding companies a form of centralized control which he considered culpable. Mr. Wilson and his fellow Democrats with "radical" Republican support, deliberately prohibited the acquisition of stock and deliberately did not prohibit the acquisition of assets because they thought that good, honest business men who were not "Wall Street gamblers" would do their merging through the tangible and forthright purchase of assests, whereas the "tricky Wall Street manipulator" would be likely to show his cloven hoof by arranging his mergers through the "shifty and watery" exchange of stock.

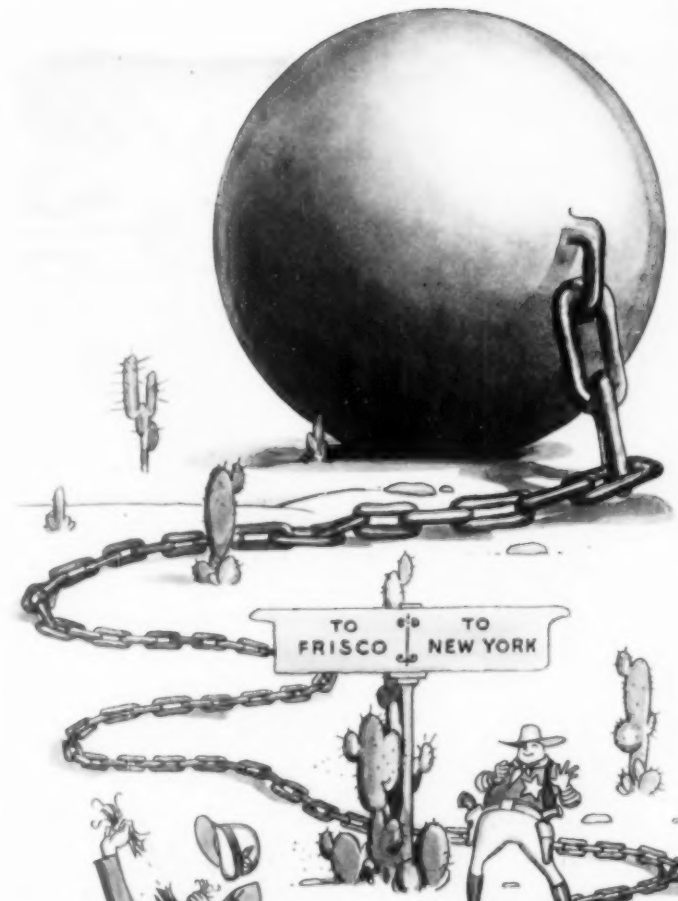
The Clayton Act has not succeeded in preventing the control of a maximum of capital with a minimum of investment, although it has made merging-for-merging's sake more difficult and less profitable. It can always be avoided, however, (as Bethlehem-Youngstown and New York-Vacuum are avoiding it) by the purchase of assets instead of the purchase of stock.

Of the two acts, therefore, the Sherman is much more fundamental although the Clayton is much more likely to apply. There seems a certain tendency to conclude that because *trust-busting* is not at the moment a major political issue, therefore anti-trust legislation is not as operative as in the days of Roosevelt and of Taft. But no conclusion could be more mistaken. There is today less tumult and shouting concerning the trust problem, partly because few of our contemporary corporations can be summed up in terms of one extremely unpopular individual and partly because most of the larger corporations whose consolidating activities might be open to question have at their disposal legal advisers to tell them what is or is not permissible. Many a prospective merger has no doubt been abandoned on advice of counsel without ever having reached the stage of public announcement. It is true that business men themselves seem to know little, and the general public nothing, of the real character of anti-trust legislation. Because William Fox (who for a long time operated without much regard to legal advice) bought Loew stock (not assets), he incurred (and bequeathed to the present Fox management) a Clayton Act prosecution of an extremely embarrassing nature. And when newspapers report the purchase of assets as an exchange of stock (because the purchasing company usually makes a stock payment) they are, strictly speaking, reporting almost every merger as an exceedingly illegal transaction. But the Sherman Act is as much alive today as on the day of its passage. It has been, and it continues to be, an influence of major importance in restricting any tendency toward monopoly. Many of our basic industries are already controlled by a very small number of very large corporations. Against the possibility that the small number shall shrink to one and that a single large corporation should become all-inclusive, the Sherman Act, for better or worse, is the major guarantee.

Finally, it is interesting that many business thinkers now believe that the Sherman Act has been a strong influence in promoting U. S. industrial development with a resultant success exactly contrary to Europe's unhappy experience with cartels. There is even a rumor that certain powerful Germans, disgusted with cartelization, are pondering the merits of a Sherman Act for Germany.

There are bonds that bind and—

Bonds that set you free!



LET'S say you're on a motor trip—miles from home. Suddenly from around a curve tears a big Sedan doing 70—maybe 80. You swerve—and escape by a hair's breadth, but . . . That man walking on your side of the road! Fortunately, you don't hit him squarely—he's apparently only cut and bruised. If you carry adequate Liability Insurance with a good, reliable company, you are protected against financial loss from claims, *but*—

While lunching at a nearby hotel, you are also served with a Writ of Attachment on which the ink is scarcely dry. The injured man has made use of the local sheriff to protect his interests before you've a chance to leave town. Your car is "attached" and as effectively "tied-up" as though he'd put a gigantic ball and chain on it. What to do?

If Ætna-ized, your Ætna Service Certificate will identify and introduce you to the local Ætna Agent. (There are 20,000 of them from Coast to Coast!) He will promptly arrange for an Ætna Release of Attachment Bond, thus restoring to you full possession of your car—*without a cent of extra cost to you!*

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Ætna is a multiple line organization, writing bonds as well as insurance. It takes care of its automobile policyholders' needs, not only from coast to coast but *in Europe,* too. It pays to be Ætna-ized! Let the Ætna-izer in your community tell you the whole story.

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Ætna Casualty & Surety Company . . . . Ætna Life Insurance Company . . . . Standard Fire Insurance Company . . . . Automobile Insurance Company of Hartford, Connecticut.

ÆTNA

ÆTNA-IZE

SEE THE ÆTNA-IZER IN YOUR COMMUNITY—HE IS A MAN WORTH KNOWING

Rittase

Carbon black, the soot of natural gas, goes down a conveyor belt to meet rubber in the vast Banbury Mixer, a mechanically churning cauldron which costs some $1,000,000. Until 1915, carbon black was used to make tires black. Its concomitant, and far more important, effect of toughening rubber has made tires of 30,000 mileage possible. A pound or so of carbon black adds 10,000 miles to the life of a tire. (The same amount added to eight gallons of oil makes enough ink to print 100 copies of an average novel.) Seventy per cent of the U. S. consumption of carbon black goes into the rubber industry, 20 per cent into printing ink, and the rest into such things as shoe polish and phonograph records. Great producer and pioneer in the carbon black industry is Godfrey L. Cabot of Harvard and Boston. In his plant, the world's largest, at Pampa, Texas, 100,000 pounds of carbon black are made each day from 58,000,000 cubic feet of gas. Of that great family of Cabot chemists (Samuel Cabot, Inc., father and son), Godfrey Cabot knows well the smells of the laboratory and the soot of his factories, and he counts as a great compliment a remark overheard among the men in a West Virginia gas field; "Hell, Cabot's just as common as anyone."

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for money with which to buy rubber for next spring's tires. Mr. Leroy's function is to keep Goodyear away from the banks. In 1921, Goodyear owed the banks $40,000,000. Today Goodyear has $40,000,000 in cash or equivalent and owes the banks not a cent. The budget control is severe. Mr. Leroy must be able to say that to pay for $1,000,000 of rubber in December, he will have on hand the necessary $1,000,000.

But let it not be supposed that Goodyear is run by a Soviet. Goodyear has a leader who has as good a claim to leadership as any man in the industry and who is almost in his own person the American dirigible industry: Paul W. Litchfield.

There is no physical connection between Goodyear and Zeppelins, since the amount of rubber used in Zeppelins is negligible. The connection is, for one thing, personal. Mr. Litchfield came from a family of New England sea folk, and in the ships of the air he feels the continuance of a great tradition. Nothing so delights him as the sight of two or three blimps settling like plump pigeons into the backyard of his Akron home. But the Goodyear-Zeppelin connection is even more noticeably psychological, for it symbolizes the Goodyear keynote: Transportation. Mr. Litchfield first sounded this note when he built with his own hand the first Goodyear automobile tire. That was in 1900, five years before Firestone got his first Ford order and the year that the Seiberlings employed Litchfield, a M. I. T. graduate, to be factory manager of their "tires-for-bicycles-built-for-two" business. Thus Mr. Litchfield has been in auto tires literally as long as anyone. He became Goodyear's president four years ago and was given the additional title of chairman this year. His fifty-fifth year of life and thirtieth with Goodyear finds Goodyear expanding in spite of bad times. Sales, of course, will suffer and profits will be considerably less than last year's $20,000,000 ($12 per share). Nevertheless, Goodyear is believed to have earned a good part of its common $5.00 dividend during the first six months.

In July a telephone conversation between Mr. Slusser in Akron and a contractor in Buenos Aires started a $4,000,000 plant a-building in the Argentine—a plant to make tires behind tariff walls. This plant follows the building of a much larger one last year at Gadsden, Alabama, in addition to which there are plants in Los Angeles, England, and Australia (Goodyear is No. 1 in Australia, second only to Dunlop in England). On the anniversary of his employment by Goodyear, Mr. Litchfield was in Europe. When he got back in August he found that the Zeppelin he was building had twelve rings up instead of six when he left.

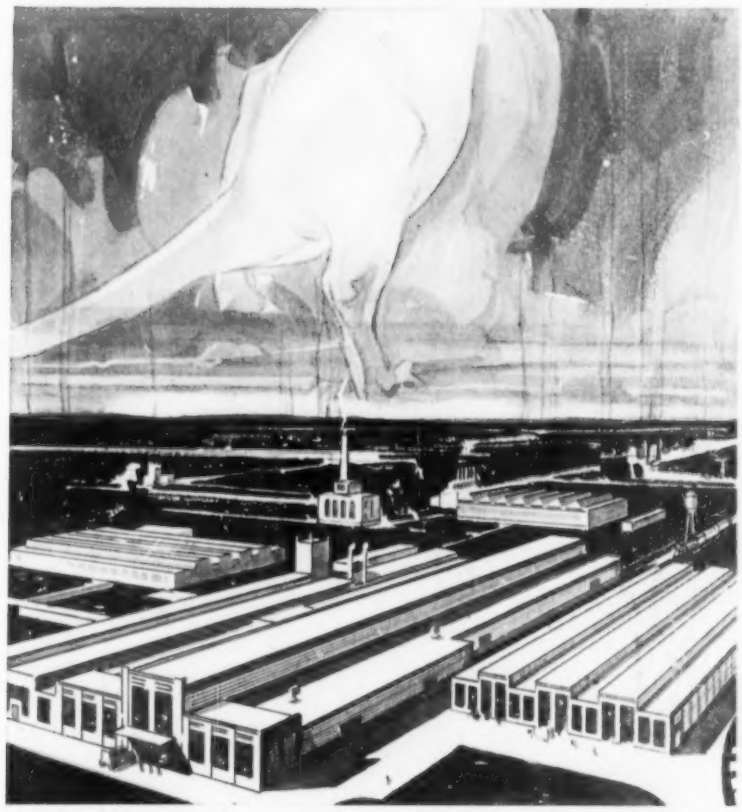
Progressive on the side of employees, aggressive in management, well-fixed as to cash, efficient in production and with great public acceptance for its essential product, Goodyear faces its future with an understandable enthusiasm.

II—Goodrich

Old Humphrey O'Sullivan was born nearly eighty years ago in Skibereen, County Cork, Ireland, and learned the printer's trade. He studied oratory and literature and came to Yonkers, N. Y. But at Lawrence, Massachusetts, he left printing and went into shoes with his brother. They paid themselves each $15 a week salary and fifteen cents a week for spending money. They kept up this dreary salary discipline for twenty-one years, putting "back into the business every damned dollar," except $30.30 a week. During this period they married patient, loving wives.

A Dr. Savory, who apparently had foot trouble, desired to have his shoes coated with rubber, and the O'Sullivans gave him a shoe with corrugated soles cemented and screwed on. After supplying Dr. Savory for several years, the O'Sullivans heard that a Boston firm was making shoes with rubber heels.

IN THE DEMISE OF THE DINOSAUR LIES A WARNING TO INDUSTRY



The lumbering incompetence of pre-historic dinosaurs disqualified them for survival against the competition of more capable creatures . . . unable to meet the flux of conditions in an ever-changing world, they perished.

A modern counterpart is found in industrial plants that have remained stationary while the world has moved forward.

To make real progress manufacturers must modernize or build anew . . . coordinate the producing abilities of their plants with present-day demands . . . lower prices must be met with savings in the cost of production . . . savings that originate in good design before a single shovel is turned. Good engineering, worth many times its cost, is the first step to profits and one of lasting consequence.

In these modernizing operations, Austin Engineers become an important factor. They bring to you the most up-to-the-minute ideas and a wide experience which can be advantageously applied to any project you may contemplate. Wherever your building operations may be located you will find an Austin Organization in the field. There are 16 Austin Offices, from coast to coast, ready to serve you.

THE AUSTIN COMPANY

THE AUSTIN METHOD

The Austin Method of Undivided Responsibility

Design, construction and building equipment . . . separate responsibilities ordinarily . . . become one unified responsibility under The Austin Method. One nation-wide organization handles the complete project under one contract which specifically guarantees in advance, total cost, time of completion with bonus and penalty clause if desired; and high quality of materials and workmanship.

ENGINEERS AND BUILDERS . . . CLEVELAND

Rittase

The vulcanization of tubes now takes place in a period of only seven minutes. Here in the Goodyear factory is a battery of vulcanizers operated by an automatic timing device. This development is one example of greatly increased mechanical efficiency in recent years.

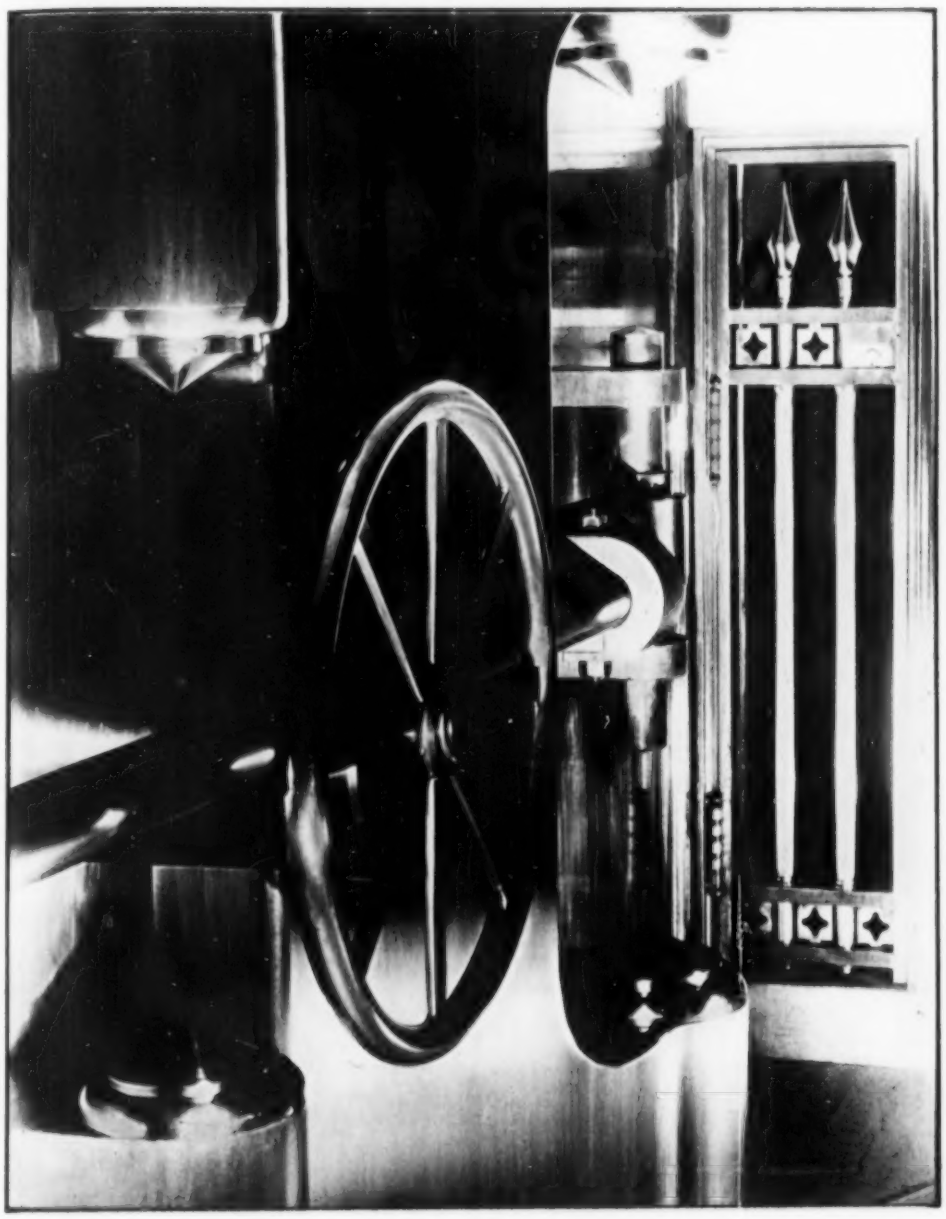
Upon examination, the O'Sullivans decided that the rubber was so soft that the wearer was really walking on the metal screws. With an idea to sink screws lower, Humphrey O'Sullivan got the Boston Belting Co. to manufacture for him. The other O'Sullivan would have nothing to do with the silly business, but Humphrey made $32,000 net his first year. Then along came the B. F. Goodrich Co. with a better rubber compound, and ever since Goodrich has made O'Sullivan's Heels. That was about 1900. Since then those heels have numbered millions—yet a tiny part of the Goodrich business.

In 1905 a husky mining engineer who had rowed on the St. Paul's School crew and had just graduated from Harvard found himself jobless in Colorado. The mine he worked for failed. Penniless, James D. Tew beat his way back to his home near Akron and took a job with Goodrich. This might seem a natural thing to do, since his father, who married B. F. Goodrich's sister, was an original stockholder in the company, which began in 1870 as a partnership, Goodrich, Tew & Co. But Tew's father had retired, and anyway James Tew was quite sure he did not want to go into the Akron rubber business. However, even a Harvard man must eat, and even an elementary knowledge of chemistry could be of some use to rubber at a time when nobody knew much about it. Presently James Tew asked for a raise. Presently he got into an argument and went over to The Diamond Rubber Co. In 1912 Goodrich bought Diamond, becoming thereby the biggest tire-maker for four years, and James Tew was back in Goodrich. Since then he has liked it and Goodrich without Tew would seem as strange as Rubber without Goodrich.

The line of O'Sullivan's Heels out of Ireland through Boston and the line of James Tew out of Harvard through Akron intersect at the hub of a great industrial policy. Goodrich makes tires—some 10,000,000 a year. On several occasions it has led the way in tires; its Silvertown Cord was one of the few tire developments which the public really appreciated, and it is definitely the leader today in airplane tires. But Goodrich also makes 32,000 *different* rubber articles besides. It makes garden hose and bathing caps, O'Sullivan's Heels and baby pants, invisible parts of automobiles and balls of all colors. It coined the word "zipper," makes footwear of all kinds, golf balls and linings for tanks, flower pots, hat racks, fountain pen sacs, life-belts, razor straps, shaving brushes, dog collars, corset ribs, rolls for printing presses, hot water bottles, doctors' gloves—rubber that is soft as silk or hard as rock. The extent of this infinite variety is faintly understood from the fact that Goodrich requires 1500 different formulae for treatment of rubber in order to produce these articles. Obviously Goodrich must be as much of an idea-factory as a rubber factory. To the casual observer this makes Goodrich much the most interesting plant at Akron. In its "specialty" division, there is an appearance of little tricks of magic being performed in every corner. What with toy balloons blowing up and baskets full of gaudy bath caps and great hunks of rubber sponge for you to walk over and white powder everywhere (to keep rubber from sticking) there is, despite the solemn faces and flying hands of workers, a sense of carnival.

But President Tew is no showman. In his paneled, soundless office the variety show becomes analysis. In the top right hand drawer of his desk is a little black book, bound in leather, not rubber. In this book the entire rubber business is reduced to figures, a code which only a man of his practical factory experience could properly interpret. To President Tew infinite variety of product is a business policy of which he is the chief exponent and upon which he counts to insure the interest on his bonds and the dividends on his stock.

Tires made rubber manufacturing a big thing. But also a financially distorted thing. Take the Goodrich case. For a generation before 1910 it had become, slowly, the outstanding manufacturer of miscellaneous rubber goods, but it was by no means a huge affair. Then came tires. In 1912 Goodrich was recapitalized with $15,000,000 of preferred and 300,000 shares of common. It then absorbed Diamond and doubled its capitalization. Here nearly twenty years ago was a business with a net worth based on market values in excess of $72,000,000. It is a sad commentary on the effect of tires on rubber that today the market net worth of this excellent company is only about $65,000,000 in spite of the fact that stockholders or employees have contributed about $40,000,000 of additional money or property.



★

The FIRST
NATIONAL BANK of
BOSTON
1784 — 1930

★

The unceasing improvement of banking machinery and banking methods is exemplified by THE FIRST NATIONAL BANK *of* BOSTON. *As one of America's outstanding national and international financial institutions this bank solicits your business both at home and abroad.*

Foreign Branches: Buenos Aires, Argentina; Havana, Santiago, Cienfuegos, and Sancti Spiritus, Cuba. *European Representatives*: London, Paris, Berlin. *Domestic and Foreign Correspondents*: 22,000 Banks throughout the World.

This is what people mean by profitless prosperity. In the case of tires it has been the prosperity of one year canceled by the emergencies of the next.

Thus there is obviously good reason for President Tew's policy. Remembering that his company is not one of the hundreds which failed, but on the contrary has grown through fiercest competition to gianthood and has never encountered such grief as Goodyear's debacle of 1921—remembering all this, the presumption of doubt might well be against tires as the be-all of rubber manufacturing. President Tew has no intention of letting his tire business slip away. But he does not intend to be driven into a desperate corner by reason of having to sell tires or nothing. Tires account for 55 per cent of his business, so Goodrich is primarily a tire manufacturer. But 55 per cent is not 100 per cent nor yet 90 per cent. The remaining 45 per cent represents some $75,000,000 of annual business—business of every sort, supplying thousands of different kinds of demands, well-balanced over the seasons and not subject to the rise or fall of automobiles. This business gives him today a comfortable balance to tires and presents possibilities of expansion.

Furthermore, this policy results in industrial progress apart from profit and loss. Only this year, for example, Goodrich announced a scientific marvel—the plating of rubber on metal by Vulcalock process.

Whether ultimately the policy will result in steady profits remains to be seen, for, as we have said, the rubber industry is only just emerging from its hectic years. So far in 1930 the Goodrich results are not satisfactory, but basically the Goodrich position is good. It took advantage of the bull market to obtain money and pay Wall Street its bank loans. Its name is famous and connotes fair dealing. Its management in present form dates really from about 1927, since when there has been further expansion, with consequent changes in personnel. There is now a vice president in charge of each major division, from purchasing and production straight through to consumer: Messrs. Graham (tires), Newhall (footwear), Connors (mechanical goods), Griffith (sundries). These are the men who under President Tew make good the slogan that Goodrich can make whatever is made of rubber.

III—Firestone

We have already suggested that the principal reasons for lack of steady profits in the tire business in the past are not likely to apply in the next few years. Ample supply of rubber now lessens the uncertainty concerning the price thereof. Elimination of hundreds of small companies by no means eliminates competition, but does leave the responsibility for tire prices in stronger hands. And these stronger hands are now represented by management which is not only more mature, but which is also more responsible than previously to stockholders.

But because the tire business has outgrown the troubles of youth does not mean that it is without troubles today. It has a most serious trouble indeed, and that is sales trouble. To the outsider it would seem that the tire industry is engaged in an extremely doggy dog fight. Competition is not only intense, but even bitter.

Space prohibits any adequate description of the present competitive situation. We will simply record one development. And we do this in our Firestone note because Firestone led the way.

When in 1926 Mr. Firestone wrote that captivating biography, *Men and Rubber*, he said he would never go into the retail business. That consistency is a virtue of small minds was never better proved than when two years later Mr. Firestone went into it with a bang. Now dotted throughout the land are Firestone One-Stop Master Service Stations, painted light blue and attractive to the motorist who had been accustomed to the corner lot mess that was called a filling station. In building these stations Mr. Firestone's plan was to take dealers into partnership, Firestone owning 51 per cent and the local dealer 49 per cent of the stock. The merchandising idea was obvious but nevertheless brilliant. Selling gas, oil, and other service, the stations would not only cut down tire distribution overhead, but would also attract new buyers for Firestone tires. The difficulties are also obvious. It is easy to build a finer station than the local trade can support. And it is difficult to find dealers with enough ability to run them. Nevertheless, what with the mail order houses selling cheap tires, and what with the general ferocity of competition and the inefficiency of the old-time tire-dealer, something had to be done, and Mr. Firestone did it on a grand scale.

That he was right in principle, although possibly too lavish in detail, seems to be the consensus of opinion. At any rate, he has the flattery of competition. Worked out on somewhat different lines, Goodrich now has 110 handsome tire stores, some of them being service stations, others developing miscellaneous rubber sales in connection with sales of other household goods. And it is now believed that Goodyear has "taken over" more of its dealers than any other company. In other words, the big companies have evidently decided that they must see their tires through from production to consumer.

This necessity was enhanced when last month Standard Oil of New Jersey announced that it would sell tires in its filling stations. S. O. N. J. will have Goodrich make a special brand for this sale, just as Goodyear has long made special tires for Sears, Roebuck. All of which is definitely characteristic of one of the biggest questions in modern business—will the manufacturer control the chain outlets, or will the chain outlets control the manufacturer? And also, in this case, there is presented the curious (but, of course, unlikely) alternative: will gas control tires, or will tires control gas?

Tire sales divide themselves into two parts: "original equipment," i. e., tires sold to automobile manufacturers and "replacement," i. e., sales to the public. Over the last five years the former has averaged 28 per cent, and upon this business no real money is made. (The big orders do, of course, help to reduce factory costs per unit.) On the other 72 per cent the cost of distribution has been enormous, probably 40 per cent of the retail cost. This is not only a challenge to distribution efficiency, but also an invitation to competition. The future prosperity of the tire companies is likely to depend, more than anything else, upon the degree of sanity exercised in the inevitable competitive battle.

Incidentally, it is amusing to note that the prize in this battle is not the American female, who is supposed to do most commodity buying, but the American male. For the woman, it seems, makes the man pay for the tires, desiring that tire expense shall not be confused with her household and personal budget. But, of course, if fierce competition should make tires an object of continual bargain-hunting, then the female, entering intimately upon the scene, might prove, so far as tire manufacturers are concerned, deadlier than the male.

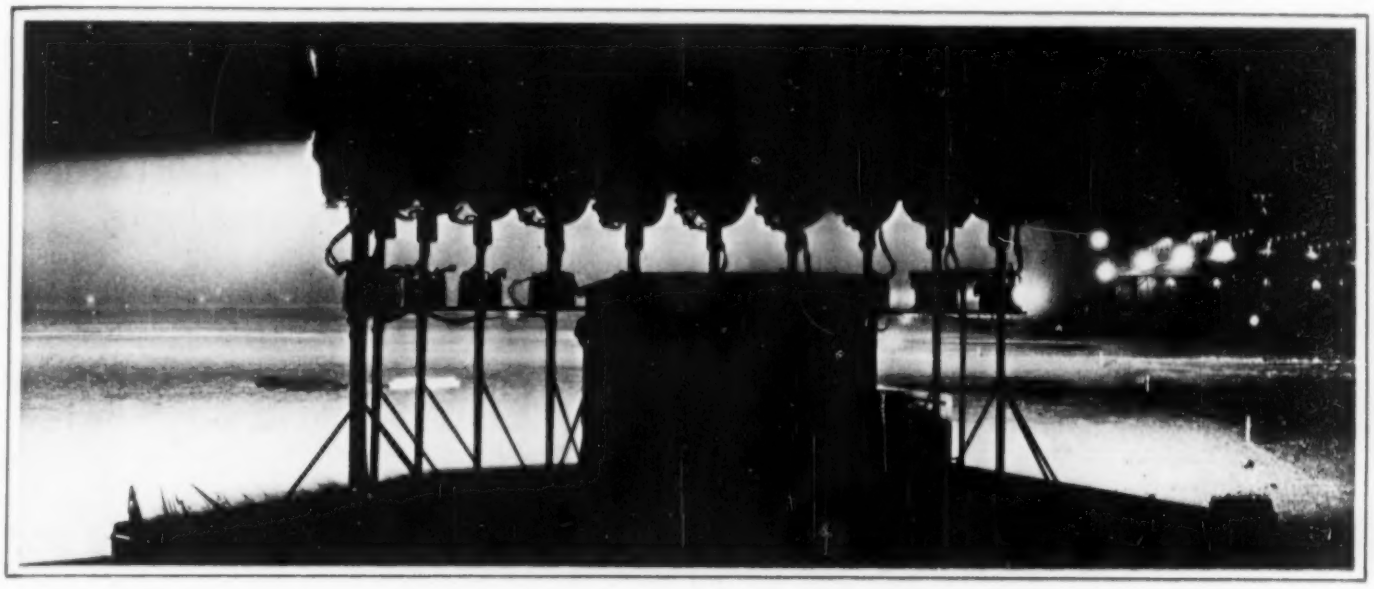
IV—U. S. Rubber Co.

At a meeting of the board of directors of the U. S. Rubber Co. held Tuesday afternoon, January 15, 1929, in the company's building near Columbus Circle, New York, Francis Breese Davis Jr. was elected a director, member of the executive committee, chairman of the board of directors, and president of the U. S. Rubber Co. He knew nothing more about rubber than any assiduous, intelligent engineer-business man should know. The company had no need of knowledge; it needed wisdom.

As a storehouse of knowledge, U. S. may perhaps claim preëminence. One of the many companies which were put together to form U. S. in 1892 had been the first to vulcanize rubber on a commercial scale, it having been licensed in 1842 by Mr. Goodyear. So the only existing portrait of Mr. Goodyear (see page 78) hangs above Mr. Goodyear's desk in the lobby of U. S.'s executive offices. U. S. further claims to have been the first to make clincher tires, the first to make automobile tires (1895, when the automobile was a joke), first to manufacture cord tires, etc., etc.

Its knowledge extends to every use of rubber. While Tew of Goodrich is the prime proponent of the diversification, U. S. is actually more diversified, only 35 per cent of its business being tires and it doing some $100,000,000 worth of non-tire manufacturing against Goodrich's $75,000,000. It is the only company which makes a complete golf ball (Goodrich manufactures golf ball stuffings). Today U. S. laboratories pipe knowledge through the company as never before. Marvelous and of an importance which cannot yet be estimated is its develop-

[*Continued on page 143*]



A night view of a modern Airport, illuminated with Westinghouse Airport Lighting Equipment

DAYLIGHT LANDINGS *for the* MIDNIGHT MAIL

Tune in the Westinghouse Salute over WJZ and the coast-to-coast network, every Tuesday evening.

The Mail's coming in! Out of the dark stillness far above comes a faint hum, swelling into a rhythmical throb that quickens the blood with the insidious power of a tom-tom. A random flash from a wandering beacon picks up the glint of a silver wing. The throbbing ceases — then a golden torrent of light suddenly pours forth across the broad field, flooding it with a glare-free, shadowless brilliance. Midnight is turned magically to noon—and the midnight mail glides gracefully down to a daylight landing.

On hundreds of airports throughout the world today, this scene is all in the day's work. And in many outstanding examples, such as the new municipal field at Newark, the lighting equipment that makes it possible is by Westinghouse — a part of electricity's contribution to the new industry that is to become the tool of all industries.

On many a desolate, inaccessible mountain-top, beacons are kept unfailingly alive by Westinghouse individual electric plants. And throughout every step of aircraft and engine manufacture today you will find Westinghouse motors and Westinghouse electrical equipment showing the way to low cost, standardized production.

Westinghouse service to aviation is typical of its service throughout modern industry, wherever there is need for specialized knowledge in the electrical engineering field.

Westinghouse

A.T.&T.: Its Stock—*Continued*

very much in the nature of assessments, because, from this same standpoint, a share of A. T. & T. stock is always dealt in at its par value and the stockholders were simply being requested to make a further monetary contribution to their corporation. From the investor's standpoint, however, the fact that Wall Street values A. T. & T. stock not at $100 but at $220 of course means that the A. T. & T. stockholder is given the privilege of adding to his holdings at a price very much below the market and that with the exercise of every such privilege his return on his investment is increasing over its original 4 per cent.

The question of how much more than 4 per cent the Telephone investor gets by reason of his frequent opportunities to make an additional purchase at 9 per cent is somewhat obscured by the fact that what might be termed the speculative position on A. T. & T. is a good deal more concerned with Telephone earnings than with telephone stock subscriptions. On the other hand, inasmuch as the exercise of these opportunities to buy stock at par is a very important item in the return which the telephone investors secure, it is advisable to consider, very briefly, how much the investor should value the subscription feature of his stock.

Suppose that the investor with 100 shares exercises his subscription rights at a one to six ratio and therefore (in even numbers) buys seventeen new shares at $100. When another one to six offering happens along, he now has 117 shares and so gets not seventeen but nineteen additional shares. If he gets a chance to keep on compounding his holdings every other year, and at the same ratio, in ten years (or five offerings) he will have bought 117 new shares at $100 and will have paid $11,700 for them. Adding his new shares to his original 100 shares (which he bought at $220 and which cost him $22,000) he will have a total of 217 shares on which he will get $9.00 a share dividends. His return will be $1,953, which is about 6 per cent on his total investment ($33,700). At the end of five offerings (ten years), therefore, the investor has a 6 per cent investment and has more than doubled his holdings. And in subsequent years both the return and the shares increase, the ratio of income to investment slowly approaching a 9 per cent millennium, which, however, it cannot quite reach even at infinity.

It should be parenthetically noted, however, that the investor with rights to buy additional shares at par can sell his right to buy new shares while retaining his old, and that this possibility opens up several more or less speculative methods of juggling rights to get the largest immediate return. The man with 100 shares at 220, for instance, could sell his 100 rights for nearly $20 each, collect some $2,000 on the sales, add to this sum his regular $900 dividend, and show for his $22,000 investment a return of $2,900 or 13 per cent. But, of course, he will always have only 100 shares and on years in which no rights are offered he will never make more than 4 per cent. Should rights worth $20 be offered every other year, and should he always sell them and bank the money, his investment would net him an average of 8.6 per cent per annum. But his number of shares does not increase, his percentage of ownership of the company decreases, and a slump in the market value of his security of course reduces the selling price of his rights. It is also possible to sell rights and to buy additional shares with the money so obtained. This system has the advantage of increasing the number of shares without increasing the capital investment; on the other hand the shares increase slowly and the speculative element of the market price again becomes prominent. On the whole, the investor who continually exercises his rights builds up his holdings so much more rapidly than by any other method that his system is not only the safest but, in the long run, probably the most profitable. And it is certainly the system recommended by the Telephone company and practiced by the majority of telephone stockholders.

• • •

It is probable, however, that a good many purchasers of Telephone stock and an even larger percentage of those who advise others to purchase Telephone stock have their eyes fixed mainly on the earnings-per-share of the Telephone company. A. T. & T. itself (as distinct from the Bell System) reported 1929 earnings of $12.67 a share. But the per share earnings of the Bell System itself were considerably larger, since most of the subsidiary companies in addition to paying A. T. & T. a dividend retained some of their earnings to put into their own surplus. If, for instance, a wholly-owned subsidiary made $10,000,000 and paid $9,000,000 in dividends, there would remain $1,000,000 which would not show in the earnings-per-share of A. T. & T. With twenty-odd companies each annually earning a surplus in excess of dividends, it is obvious that the combined surplus of the entire System would, over a period of years, run into very large figures and also that these figures would not appear in the A. T. & T. report. From this situation has arisen the theory that the Telephone company is "really" making "a lot more money" than it "shows," and the inference that in buying A. T. & T. stock one is buying a share in a great profit reservoir which will some day burst its confines and rush out in a golden flood. "The Telephone company reports $12.67," says the knowing investor, "but it actually makes at least $16, and while perhaps it could not pay more than $9.00 on $12.67, it can certainly pay more than $9.00 on $16. And the longer they keep on paying only $9.00, in dividends, the bigger the melon that we, the stockholders, will some day cut."

Here is certainly an interesting, but also a debatable proposition. It is, of course, true that the $12.67 reported by the Telephone company does not represent the System's earnings per share. The Telephone company does not report a System-per-share earning, and a good many statisticians have attempted to supply the omission, sometimes with rather fantastic results. On the whole, however, and allowing for the 7 per cent of the Bell System not owned by the Telephone company, the money earned by Bell companies but not paid to A. T. & T. in dividends amounts to approximately $3.00 a share. Thus the earnings of Telephone stock in 1929 did total $15.67 and the argument that the company "really" earns $16 is sufficiently sound. It might be noted, however, that there is no great mystery about all this, since the Telephone company publishes a consolidated Bell Statement from which the allegedly "excess" or "hidden" earnings can be readily calculated and since the companies (chiefly Western Electric) not completely consolidated in the System report publish their own statements from which it is possible to extract anything the Telephone company might have up its ample sleeve. Thus, for instance, the idea that the Telephone company is running up a big hidden surplus in Western Electric conflicts violently with the fact that Western Electric last year paid the Telephone company $23,500,000 out of its $27,000,000 earnings and that the total Western Electric surplus is $14,000,000, or about 3 per cent of the surplus which the consolidated Bell statement shows.

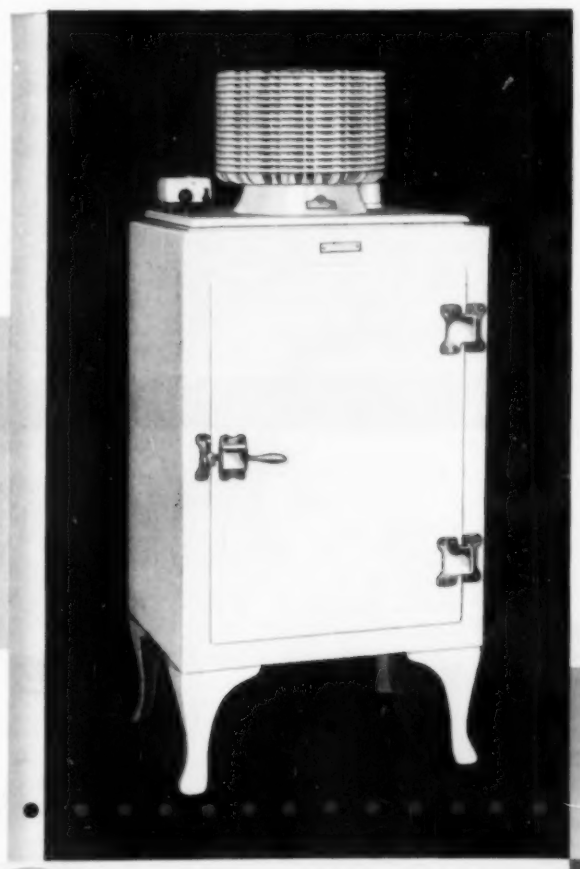
Furthermore—and this is the most vital point—the Telephone company, cheerfully conceding earnings in the neighborhood of $16 a share and religiously holding to its determination to pay only $9.00, says that it needs the difference in its surplus, that it cannot and will not pay out a nickel more in dividends, and that *anybody who thinks he could run the telephone company and pay more than $9.00 without injuring the value of the investment does not know what he is talking about.* It also adds that $16 is a very generous estimate for a very unusual year. It says that it considers that its stockholders are *at present* getting a very equitable return on their investment, and the fact that these stockholders are being well treated is conclusively shown by the fact that the Telephone company has not the slightest difficulty in raising funds by selling stock. The Telephone company did not (and could not) say that it would never pay more than $9.00 for its regular dividend, but it certainly left the strongest of inferences that since, under the present conditions, it continues to attract additional capital sufficient for its growth, it has not the least intention of giving its stockholders more than they at present are receiving. If, then, it is pointed out that a security with virtually a fixed yield is essentially a bond or a preferred stock, whether it is called a common stock or not, the Telephone company enthusiastically agrees with this analysis and says it is more

[*Continued on page 112*]

FOR 15 YEARS GENERAL ELECTRIC SAID... NO

For fifteen years they worked behind closed curtains—General Electric pioneers! • Building refrigerators...destroying them...building more refrigerators...destroying them. • Behind them stood the entire resources—the vast Research Laboratories of General Electric—the combined genius, scientific knowledge and craftsmanship of General Electric engineers. • Discovery after discovery marked their progress. Each year bore witness to new refinements of construction and design. Each year a better refrigerator—sturdier, quieter, more durable, more efficient, more economical in operation. • For fifteen years they pioneered—and perfected. Building refrigerators which you and I would gladly have bought—but which General Electric steadfastly refused to sell. • Today, if you should visit in Schenectady, New York, the birthplace of General Electric Refrigerators, you would discover a long, white row of early models standing there. Not tombstones of the ghostly ancestors of today's refrigerators—but monuments to a General Electric ideal!

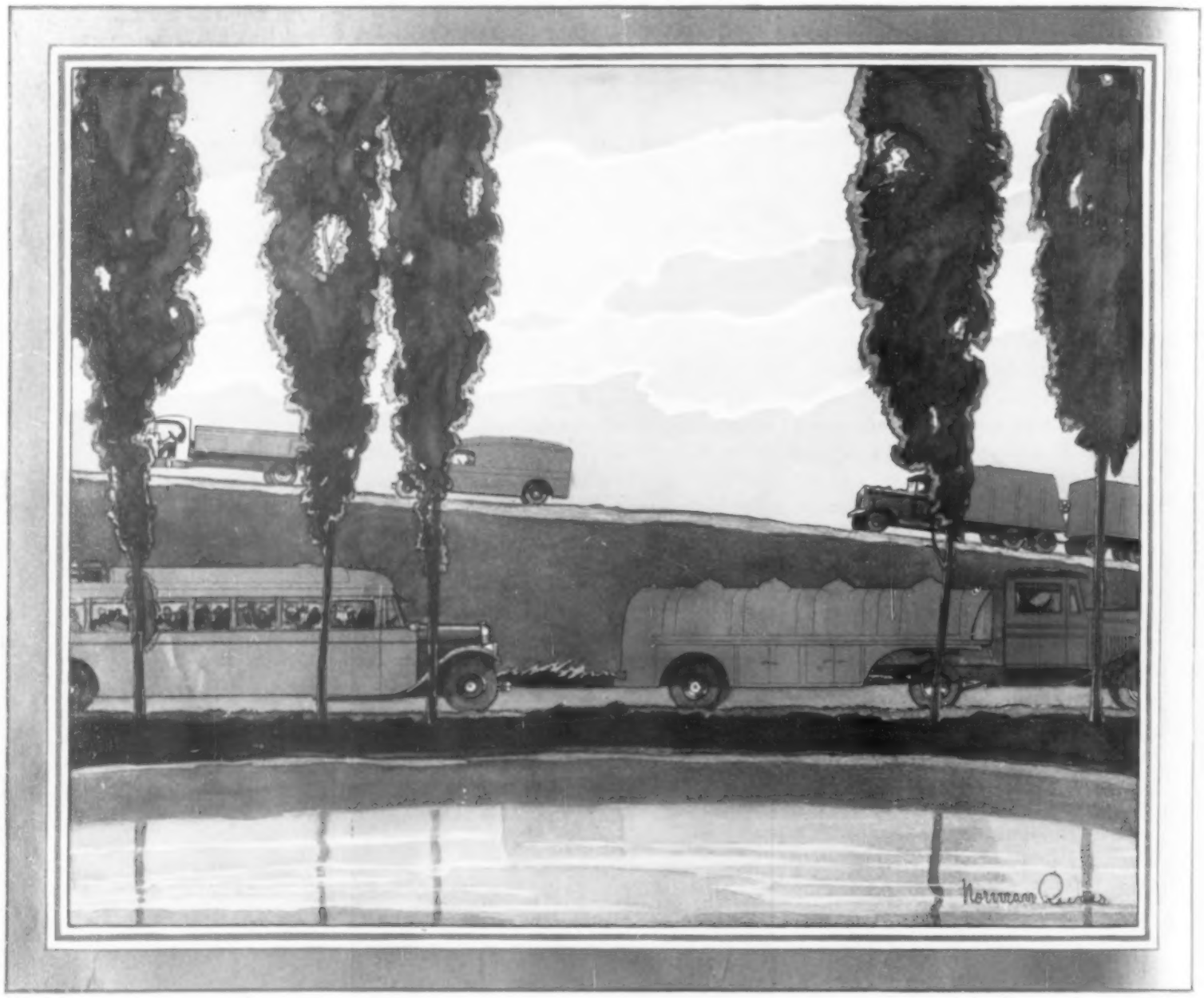
• Today, when you visit the display rooms of any General Electric Refrigerator dealer, you will see for yourself the radiant descendant of these fifteen generations of refrigerators—a refrigerator with a mechanism so extraordinarily efficient, so utterly reliable, that General Electric has been able to SEAL UP EVERY MOVING PART WITH WALLS OF STEEL, and say to you, "This refrigerator will serve you faithfully through the years. The name—the approval—the unqualified endorsement of General Electric are upon it!"



TODAY GENERAL ELECTRIC SAYS • • YES

GENERAL ELECTRIC

ALL-STEEL REFRIGERATOR



Soon – nearly all Trucks and Buses will have Aluminum Bodies

Business on wheels has found an escape from the burden of excess dead-weight. Built of the strong Alloys of Alcoa Aluminum, truck and bus bodies that are 1,000 to 6,600 lbs. lighter now speed over the highways.

Using an aluminum truck body, a coal dealer is carrying 1,800 lbs. more coal every trip—without added horse power. A building material manufacturer is adding 20 tons per day more pay-load to each truck and trailer. Only ⅓ as heavy as iron or steel, the light, strong Alloys of Alcoa Aluminum reduce the weight of buses 20 to 30%.

In every phase of transportation these Alloys are bringing similar weight savings. Today you may ride in an aluminum train, for several railroads operate trains with cars built largely of Alcoa Aluminum Alloys. All-aluminum planes carrying passengers, merchandise, and mail, reduce coast to coast trips to 48 hours. Aluminum trolley cars operate on regular schedules in city and suburbs.

And in manufacturing too, in those thousands of cases where light weight and strength are factors, these Alloys are being used to replace heavy old-fashioned metals.

Every representative of Aluminum Company of America has a wealth of information on the weight saving possibilities of Alcoa Aluminum. Invitation is given to all to draw freely on this data. Address ALUMINUM COMPANY *of* AMERICA; 2402 Oliver Building, PITTSBURGH, PENNSYLVANIA.

ALCOA ALUMINUM

such pictures, frankly pinches pennies. Mr. Ochs will not allow him to send a Wide World photographer or a *Times*' reporter anywhere by the latest means of locomotion.

Probing into *Times*' psychology, one comes upon a stratum of belief that Mr. Ochs does not wish ever to place an employee in the position of feeling that it is his journalistic duty, his duty to Mr. Ochs, to fly when this might be against the employee's better judgment. Here is an honorable distinction. When necessary, a plane manned by non-*Times*' men is chartered by Wide World. But as a result of discreet economy, this organization has the record of being the only one of the old guard to show a tiny profit.

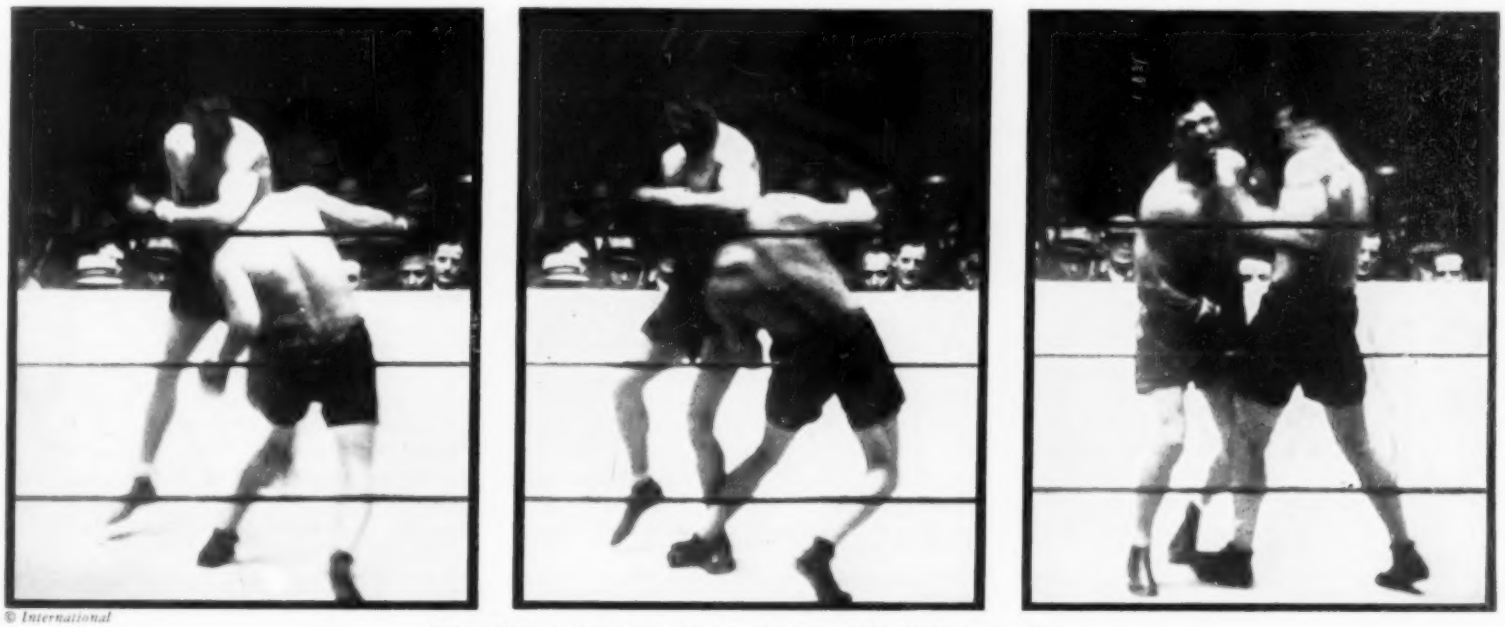
photographers plus 3,000 correspondents. This force is responsible for snapping 600,000 different pictures per year in the U. S. and Europe and selling some 530,000 prints. Of every hundred photographs submitted to a newspicture editorial staff, ninety are rejected. Efforts to peddle the selected ten result in the sale of one.

Scoopers and scooped

In explaining why he failed to arrive ahead of competition with pictures of the Dempsey-Gibbons fisticuffing, a certain crest-fallen newspicture man charged that his Wide World rival had poured water in the fuel tank of his plane. "Wh-at! That guy?"

John D. Jr. He was afraid that his daughter, Abbe, might be kidnapped. He thought that publication of her picture might aid kidnappers to spot her. Would the boys promise not to picture his child if he would pose for them? They promised, and the promise was kept. Messrs. Rockefeller, Edison, and Ford are the three older men whom Americans like most to see in newspictures. Young men: Charles Augustus Lindbergh Sr.; Edward, Prince of Wales; Babe Ruth. Try to name a woman who equals in American picture popularity any one of these six men.

Pictures of babies and what the profession calls "cheesecake pictures" (shots with female leg appeal) are the subject of much



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THE NEWS CINEMA PROVES THE SHARKEY-SCHMELING FOUL

Sharkey, his back to the camera, starts that wild left hook.

The blow lands, unmistakably low, but Schmeling does not yet show pain.

Schmeling as he feels the blow. The camera was quicker than his reaction.

Picture costs, picture prices

Getting back to the old guard, we find that Acme is proud of scooping the *Bremen* (not the liner but the airplane which first flew the Atlantic from Europe to America) at a cost of $18,000. Of this Acme paid $15,000, and other services with whom the scoop was "split," the rest. A plane to fly pictures of Colonel Lindbergh's crash in Mexico to St. Louis cost Acme $1,700.

A consensus of statements from newspicture executives is that International, P. & A., and Acme each spends approximately $500,000 per year and recoups about $250,000. By sagaciously exploiting its unique position A. P. (which spends $750,000) breaks even.

On the operating side P. & A., typical of the old guard, employs at Manhattan headquarters thirty salespeople, over 100 darkroom processors, a newspicture editorial staff of eight, and in the field eighty staff

exploded the executive to whom this excuse was offered. "He watered your gas? Not a chance. He hasn't got the guts."

Probably this was gross libel. If the slandered Wide World man had not been up to the gutty standards of the game, he would never have been sent out on so important an assignment. In the long run, members of the Big Five know that it does not pay to water each other's gas, slash each other's tires, or destroy each other's plates, but the profession from its resourceful executives down is somewhat piratical. On the other hand, newspicture men must be sufficiently suave to handle John D. Rockefeller Sr. and J. P. Morgan.

Although his aversion to newspicture men is great, Mr. Morgan's heart is not of stone. He once relented at the half-sobbed appeal of a young photographer: "Sir, it means so little to you, but it means my job to me!"

Years ago the boys made their peace with

argument. Some editors hold that a baby will sell more papers than the best cheesecake ever made, but "the baby sure has got to be good."

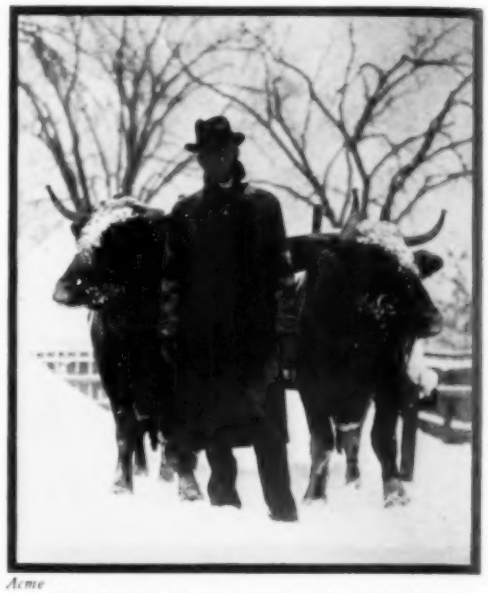
From the day of Charles Augustus Lindbergh Jr.'s birth, there was a newspicture price of $1,000 on his baby head. As an occasional contributor to the New York *Times*, Colonel Lindbergh did the handsome thing, snapped his son himself, and gave the negative first to Wide World, a few minutes afterwards to several other papers. Mr. Ochs responded handsomely by printing this picture not as the front-page stuff it was, but on the *Times* inside page No. 3. Other papers front-paged the "Eaglet."

Faked or composite newspictures are rare. They explain, however, certain mysteries. Just as the late Rudolph Valentino's funeral was about to begin, Manhattan news-venders appeared with copies of the *Graphic* picturing the ceremony. This miracle had been worked the night before by that

International

OVERTURE

Miss Evelyn Nesbit, when she was the toast of New York at Rector's and Sherry's. Most tycoons over sixty still remember wistfully how sweet, how beautiful, how unfortunate she was.



Acme

MR. FORD WITH "TIM AND TERRY"

The public prefers new pictures of people they have seen before. A picture of the queerest Oriental potentate on his outlandish throne is infinitely harder to sell than this homely snap.

most enterprising executive newspicture editor, Frank Mallin of the *Graphic*. Through the coöperation of the undertaker, Frank E. Campbell, a dress rehearsal was photographed and palmed off as the original.

Science and newspictures: telephoto

You or anyone else can walk into the telephoto station at New York, Boston, Cleveland, Atlanta, Chicago, St. Louis, Los Angeles, or San Francisco and send simultaneously to all the other stations for $105 a picture of anything that can be photographed. Obviously telephoto is the greatest boon which science has conferred on newspictures.

Today the picture race is only to the nearest telephoto station. If two or more newspicturemen arrive neck and neck, they find themselves confronted by a sort of teller's window. The American Telephone & Telegraph Co. will send first that picture which is first through the window.

In Manhattan the A. T. & T.'s mild Mr. Tuggey recalls that one evening six masked men with drawn revolvers lined up on one side of his window, and a little later six similar gangsters representing another firm took the other side. "I was somewhat perturbed," says Mr. Tuggey, but fortunately the men with pictures to send did not arrive neck and neck. Indeed, they seldom do. The winner of that particular race dashed in so far ahead of his rivals that the twelve gangsters merely served as a sort of board of umpires while the scoop was slotted.

The ordinary private or commercial user of telephoto may be agreeably surprised to learn that he can send a typewritten page of 900 words by telephoto to all stations or to any one at rates cheaper for this volume of wordage than by telegraph. Brookmire Economic Service of New York is one concern which telephotos a weekly bulletin to San Francisco for printing and mailing there to western clients. Another arrestingly practical use of telephoto is to correct advertising proofs at transcontinental range.

Imagine an electric eye horizontally scanning a picture at New York (as your eye scans a book, line by line) and transforming its impressions of blackness, grayness, whiteness to a light valve in San Francisco which records the message in modulated light as a line of varying density on a sensitized film. This process is repeated with many parallel lines, so minutely fine and so close together that they blend into a well nigh perfect picture. That is all there is to the telephoto, except more than twenty years of research costing millions of dollars. The principle of scanning was clear from the first. But to send telephotos 3,000 miles with only *two* wires so that an ordinary telephone line could be used meant grief—Great Grief!

International

CARICATURE

A recent photograph of Mr. Thaw and his divorced Evelyn.

International

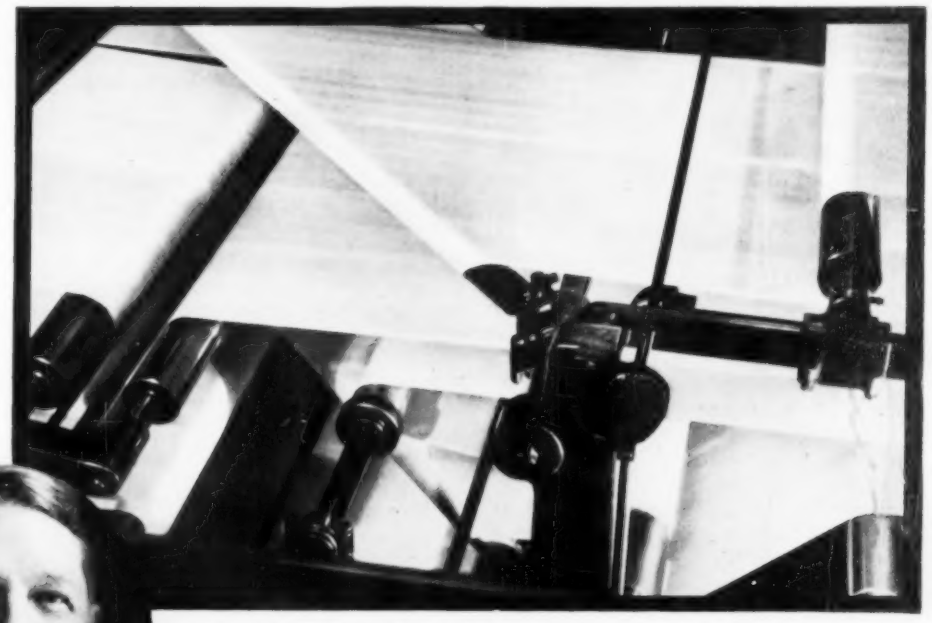
"BOLONEY"

The Democratic candidate, his campaign manager, and Tammany Boss William F. Kenny, dining at Palm Beach, Florida.

ADVERTISING CAN BE NEWS, argument, entertainment, or exclamation. The vehicle of expression depends not upon whim, but upon a shrewd analysis of the reader's motives and desires. The J. Walter Thompson Company plans advertising by combining a close study of editorial technique with a knowledge of the consumer's attitude toward a given product.

"ADVERTISING *is the life-giving Vitamin of Modern Business*"

says JOHN G. LONSDALE



FROM THE PRINTING PRESSES of this country are daily issued and circulated nearly 40,000,000 copies of newspapers. A knowledge of circulations must be linked to the results of market surveys for advertising to have full effectiveness.

JOHN G. LONSDALE, President of the American Bankers' Association and President of the Mercantile Commerce Bank and Trust Company of St. Louis.

"ADVERTISING," *Mr. Lonsdale continues, "is the spark of vitality which contributes largely toward keeping in motion the varied units of production; the master salesman that unobtrusively enters the home of new markets and stimulates a desire for possession."*

BY pointing out the value of advertising in reaching new markets, Mr. Lonsdale calls attention to one of the functions of advertising which vitally concerns every established business.

In order that advertising may cultivate effectively these broader markets, it must be planned and placed with a thorough underlying knowledge of existing markets, and directions in which they can be extended.

The J. Walter Thompson Company has had long experience in making advertising an effective device to turn potential sales into real sales. Before actual advertising is planned, a market survey is undertaken to determine the proper selling strategy. New markets are investigated and appraised from the point of view of profitable sales volume.

This kind of methodical approach takes advertising out of the realm of "gambling on a good idea."

Collaborating in this manner with many leading enterprises, the J. Walter Thompson Company has proved the value of its thorough approach to advertising by the sales records themselves.

Two folders, entitled "Selling at Home" and "Selling Abroad," have been prepared briefly to show the scope of the services of the J. Walter Thompson Company.

Either of these folders, or both, will be sent to executives interested. Write to the New York Office and copies will be mailed promptly.

J. Walter Thompson Company

New York • Graybar Building • 420 Lexington Avenue

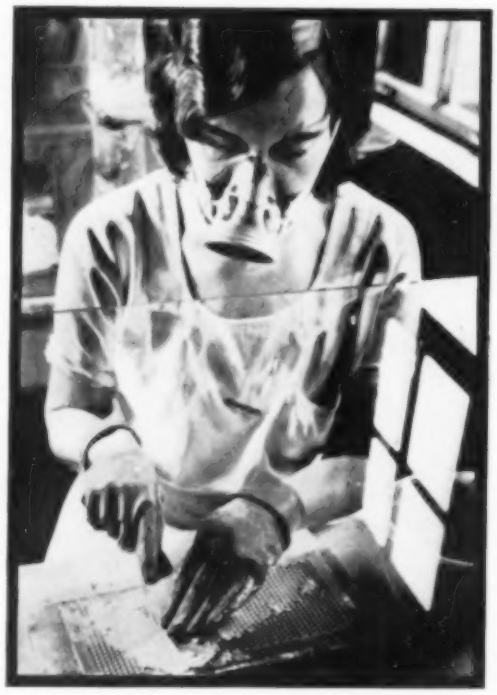
Chicago, Boston, Cincinnati, San Francisco, Los Angeles • Montreal, Canada • London, Paris, Madrid, Berlin, Stockholm, Copenhagen, Antwerp, Warsaw • Alexandria, Egypt; Port Elizabeth, South Africa • Buenos Aires, Argentine; Sao Paulo, Brazil • Bombay, India • Sydney, Melbourne, Australia • Batavia, Java

Parke-Davis—Squibb

[*Continued from page 73*]

complete and ruthless investigation is conducted in a laboratory supported by the A.M.A., through which hundreds of ambitious products pass every year. Should the marketing of a product proceed against the approval of these eminent medicos, it would proceed without being advertised in the *Journal* of the A.M.A. (aristocrat of the professional periodicals) and without being exhibited at the meetings of the A.M.A. Continued flagrance on the part of any firm would undoubtedly mean the loss of its reputation among the doctors who back the A.M.A. By way of specific example of the Council's power—a short time ago Squibb thought it had perfected a concentrate from the blueberry leaf for the treatment of diabetes. Cheaper than insulin, which costs the diabetic thirty cents to seventy-five cents a day, five pounds of this leaf could be manufactured into two grams of product. Squibb had spent $200,000 researching for it, and 40 per cent of the laboratory tests were successful, but considering the clinical results not sufficiently definite to meet the Council's requirements, discontinued its efforts to place it on the market.

The American physician is a gentleman whose ethics will not permit him to make money from any medicine, instrument, or treatment that he may have discovered. For this reason Parke, Davis, whose net profit in 1929 was $8,381,000, and Squibb, whose net for the same period was $1,546,000, are as coy as maidens on the subject of money. Poised between the profession on the one hand, their stockholders on the other, they prefer to discuss science rather than finance. Nevertheless, they are as much involved in sales management, plant efficiency, and all the usual industrial expenses for equipment and slow research as is any manufacturer of automobiles. In the laboratories where scientists reign in white gowns among smells that may be pleasant or very much otherwise, the activity is mostly invisible and noiseless, hidden in glass test tubes, retorts, microscopes, and scales. But out in the manufacturing departments the tune is a merry industrial one. The subtle serums and gland extracts, to be administered by the gram, are produced by the gallon. Several acres of Parke, Davis floor space are equipped with machines that mix, shape, compress, and coat more than a million pills a day, besides making globules, capsules, and glass ampules. At its main plant in Brooklyn, Squibb can make and fill its own tooth paste tubes on five machines at the rate of 20,000 tubes per machine per day. To achieve this mass production, the pure science of discovering and compounding pharmaceuticals has called upon capital and upon industrial and merchandizing brains.



Packing atropine sulfate paste into a mold, this girl works with her hands under glass and wears a mask because atropine is the active principle of deadly nightshade or belladonna. If inhaled it dilates the eye pupils and dries the throat. Her rubber gloves are an antiseptic precaution.

Besides the inquisitive activities of the government and the A.M.A., Squibb and Parke, Davis are always self-consciously investigating themselves. Armies of rats, guinea pigs, monkeys, goats, dogs, even roosters have been thrown by them into the first line trenches between man and death. For instance, to test Johnnie Jones' tetanus antitoxin, a stated quantity of tetanus toxin is received from the government, which maintains a standard of efficiency for all serums on the market. Into a guinea pig plunges a needle containing a lethal dose of government toxin, plus the amount of Squibb or Parke, Davis antitoxin that ought to neutralize it. If the antitoxin is not up to strength the pig will die of tetanus—a sample from the batch that saved Johnnie was tested this way. A white rat will be strapped to a tiny operating table, receiving a slow, carefully measured injection of arsphenamine (syphilis remedy). He should live, and if he does not the drug is too strong. Frogs and cats must tolerate minimum doses of digitalis. Monkeys whose ovaries have been removed test the power of Amniotin. Anæsthetized dogs, who never wake again, are injected with adrenalin to measure its reaction on their hearts. Muscles of guinea pig utera, living for one day in warm Locke's solution through which oxygen is pumped, are fastened to needles that register their reactions to pituitrin. Rats are starved of vitamin A or B or C or D for weeks, their health temporarily broken, to see how fast the products that contain these essentials to life can bring them back to normal again. The most quixotic test is that for ergot, an important drug in obstetrics, the standard of which is that one pound of crude ergot should make one pint of fluid extract of ergot which, when injected into a white leghorn rooster, will tint his comb bluish. No one knows exactly why this reaction occurs.

A Parke, Davis crop of smallpox vaccine being sealed in tubes by flame. The vaccine is made by cutting scarifications on the abdomen of a heifer tied to an operating table. After nine days, when the virus pus has formed, the heifer is bled to death, the pus retained. It is then refined, and these slender tubes are filled with it in vacuum.

The two policies

It is interesting to see how the peculiar industrial problem of manufacturing pharmaceuticals has been solved by two different internal policies. Parke, Davis, doing perhaps a $35,000,000 business with the world, is far-flung and imperial, its labels printed in fifteen languages and some East Indian dialects. In the days before the biological laboratory the firm sent out botanical expeditions to the remotest jungles, bringing back among other things coca (before the discovery of cocaine) and the now universal cascara sagrada. When the biological laboratory began to assume importance in medicine, Parke, Davis showed the world the principles of biological assay—the testing of drugs that cannot be chemically measured (digitalis, cannabis, gland extracts, etc.) upon animals awaiting in cages the pleasure of mankind. Parke, Davis first did this in 1897.

THE FAITH OF STOCKHOLDERS IS A FICKLE THING

• IN THE stilted oratory of annual meetings, a company's stockholders have often been eulogized as the "backbone of the business." In the cold light of fact, a great many corporation heads are concerned over the indifference of stockholders more than the aggression of competitors. The "backbone" needs stiffening. • Wise executives today regard the building up of confidence among stockholders as a primary duty. They know that an investor fortified by a belief in the men and methods of a corporation, and armed with first-hand knowledge, is not going to be stampeded by rumors. • That is why, with each dividend check, shareholders in certain companies receive a personal letter from the president. It may be a frank outline of the condition of the business, or it may open up new plans and vistas of profit. In any case it welds a closer relation between ownership and management. • Its effect is multiplied because it is a *real* letter—typewritten on the president's own letterhead—signed with the president's own name. In its physical make-up there is no hint of shabbiness or apology. It has the crisp, distinguished look and feel that only a fine, all-rag paper can give. • Because Coupon Bond is made, 100%, from clean, new rags, and because national advertising and national distribution have made it the most famous high-quality bond in America, it is the paper most often chosen by large corporations for letters sent from their executive offices. • Our portfolio, ' The Modern Trend in Letterheads," and a new booklet, "The Executive Letter," will be sent you on request. (In writing, please use your business stationery.) • *Coupon Bond is but one paper in the Eagle-A Line of Bonds, Ledgers, Writings, Index Bristols, Offsets, Covers, Book Papers, Mimeograph and Manifold Papers—the* right *paper for every business purpose.*

AMERICAN WRITING PAPER COMPANY, INCORPORATED
HOLYOKE, MASSACHUSETTS

EAGLE·A·PAPERS

This is the great standardized firm of American medicine, relatively unfamiliar to the public, dealing almost exclusively with the professions of pharmacy and medicine, with a slight bending toward the public in the marketing of laity products in recent years. The staff has a reputation among physicians for its scientific excellence. It is headed by Oscar W. Smith, keen business man among medicos, who entered the firm more than forty years ago and specialized in exports. Parke, Davis' general manager is Dr. A. William Lescohier, who has a background of experiment and research, and the Parke, Davis scientists include such men as Dr. Oliver Kamm, author of treatises and master of the pituitary gland, and Dr. Wilbur L. Scoville, veteran of pharmacy, awarded the Remington honor medal for 1929, which is the highest honor that the profession of pharmacy can bestow.

By contrast with the emperor in Detroit, Squibb, with about half as much business and chiefly in the U. S., is well-knit and compact. Squibb takes special pride in the fact that it produces nothing but what is marked by its own name on the label. It is one of the rare firms in possession of a founder immortalized every business day, with a new generation to keep the day busy. Edward Robinson Squibb, researcher and chemist of the 19th century, practiced medicine in Philadelphia from 1845-47; served in the Navy 1847-52; founded, with the financial aid of friends, the manufacturing laboratory of E. R. Squibb, M. D. (Brooklyn) in 1858. This man had a rugged personality with which he ruled his laboratory, experimented with drugs, and fought patent medicines. He refused to patent any of his products, bottles, or even to trade-mark his labels. He spent years trying to show a rival house how to make ether by his own process; he even loaned them his superintendent for a month. He took pride in being a scientist; he scorned trade. His price lists were computed on the basis of cost plus profit, without any reference to competitive lists. They always carried a statement to the effect that "we have the following and here is what they cost, but we want you to understand that we are not trying to get your business." Although the modern Squibb does patent its discoveries and although it does try to get business, a very definite effort is made to keep the old gentleman in sight.

He died in 1900. The business is now commanded by able, active Carleton Palmer, director of Canada Dry Ginger Ale and of The Chemical National Bank (New York branch). He became president at twenty-five, having started in the Squibb business at $20 a week, studying under his father, Lowell M. Palmer, and learning chemistry by night. The management also includes Theodore Weicker, Ph. G., Ph. C. (Columbia), first vice president and largest Squibb stockholder, who established the American house of Merck and Co., pharmaceutical manufacturers of Darmstadt, Germany; Dr. John F. Anderson, M. D., second vice president, formerly director of the Hygienic Laboratory, Washington, D. C., where he controlled the licensing of biological products; and Ferdinand W. Nitardy, Ph. G., Ph. C. (Northwestern University), in charge of manufacturing. Dr. Anderson and Mr. Nitardy have been members of the U. S. Pharmacopoeia Revision Committee.

Working closely with Mr. Weicker, Squibb President Palmer has injected some rather startling ideas into the business of manufacturing pharmaceuticals. First, a cumbersome list of 2,659 items was cut to a mere 300 scientifically efficient ones. Next, an unheard-of proposition was made to the Council on Pharmacy and Chemistry of the A. M. A. Squibb asked permission to advertise a line of household products (cod-liver oil, castor oil, sodium bicarbonate, milk of magnesia, epsom salts, liquid petrolatum, dental cream, shaving cream, and talcum powder are the most important) in national magazines—a practice hitherto followed only by patent medicine houses. The Council deliberated; finally granted permission with the understanding that (1) no claim shall be made for a specific cure by any product; (2) no broader market for the drug shall be created (it would be unethical to say, "Take sodium bicarbonate after meals to relieve gas"); and (3) no drug shall be advertised that might encourage self-medication.

On this basis the Squibb advertising, under the direction of Mr. Weicker, who coined the "Priceless Ingredient" idea, is extremely interesting. It seeks to enlighten the public on the scientific qualities of certain prophylactic medicines, but where a patent medicine house would claim a cure, Squibb bows the physician in through the door. The advertising has certain limitations. While Bayer's aspirin is advertised and sold in volume, Squibb does not advertise its own aspirin because the A. M. A. considers this a drug that ought to be taken only on physicians' prescription. On the other hand, due to Squibb's vitamine advertising, cod-liver oil has moved up in the public mind from a nasty obscure medicine to a valuable dietary supplement, and is probably the most important Squibb product at the moment. The layman cannot but feel grateful for this tearing aside, at proper points, of the curtain of professional reticence.

Squibb is particularly determined to solve, by selection and coördination of outlets, the problem of marketing scientific products in the noisy American drug store. With driving energy Mr. Palmer has originated something entirely new in the way of coöperative finance. The Squibb Plan, Inc. is a corporation whose authorized capital is divided into Distributor's Preferred Shares and Manufacturer's Shares, the same number of shares in each class to be outstanding at any one time. The former can be bought at $50 a share by independent retail druggists of whom Squibb approves; the latter are issued to E. R. Squibb & Sons. The subscribing druggist receives:

(1) a preferred annual cumulative dividend of $3.00 per share on the distributors' preferred shares that he holds;

(2) a cash distribution based on contract between E. R. Squibb & Sons with the Squibb Plan, Inc., the amount of each distribution to be determined by the retailer's direct purchase of Squibb products and not by the number of distributors' shares.

Instituted only last year, this plan increased Squibb sales to members of the plan 24.7 per cent for the entire year (the average period of membership was only eighty-four days). The average return to the druggist from his investment in the plan was 15.2 per cent for eighty-four days, equivalent to 60 per cent per year.

To neither Parke, Davis nor Squibb is the scientific laboratory a sufficient source of revenue. While, because of immense distribution, Parke, Davis' return from biologicals is larger than Squibb's, the overhead of its laboratory is enormous. Professionally speaking, doctors lose a certain prestige in joining with a commercial organization and therefore salaries for top men in either firm are high. The laboratory is really an investment in the goodwill of the medical profession, and in the future. For this reason it would seem that Squibb's policy of educating the public up to the laboratory as far as medical ethics will permit—a kind of democratization of science recently undertaken by Parke, Davis also—is a wise industrial step, and will do more toward dispelling the chaos of the present drug outlets than professional reticence has done in a hundred years.

A. T. & T.—*Continued*

than happy to have its common stock regarded as primarily a high-grade bond. The arithmetic of $16 earned minus $9.00 paid out equals $7.00 melon may be very compelling to the investor. But the Telephone company says it needs the surplus represented by the $7.00 difference, and so there is no melon, and, most fundamental of all, *even if there were a melon, the only cutting would be a cutting of telephone rates or an improvement in service.*

There remains one last refuge for the bull speculator in Telephone stock. He may argue that, narrow-minded as the telephone company may be with reference to its *utility* earnings, it might at least be a bit more liberal with its *non-utility* earnings. The Telephone company has in Electrical Research Products, Inc. (a wholly owned subsidiary of Western Electric), a corporation engaged in activities which do not apply to the telephone and are a strictly private manufacturing enterprise. Most obvious of these activities is the talking-picture machinery, handling of which Electrical Research has taken over from Western Electric. Most discussed of these activities is television (developed jointly with Bell Telephone Laboratories, Inc.), which has provoked many rosy prophecies and has also frightened the cinema people. Least heard of, but perhaps most immediately practical, is a sort of wired-wireless device for telephone

BUILDERS AND ENGINEERS FOR THE BUSINESS LEADERS OF AMERICA

Business leaders know from actual experience that they can depend upon Stone & Webster Engineering Corporation to meet required completion dates for construction projects. Construction is carried on economically and efficiently. Operation of the completed plant, office building, structure, or development meets every requirement. Our personnel, with a background of over one billion dollars' construction experience, is of a calibre well suited to work with your entire organization.

During the last ten years, more than 75% of our work has been for concerns not connected in any way with Stone & Webster interests. Our service is immediately available to you for any problem in modern building and engineering work.

STONE & WEBSTER ENGINEERING CORPORATION

A SUBSIDIARY OF STONE & WEBSTER, INCORPORATED

ESTABLISHED 1818.

Brooks Brothers,

CLOTHING,

Gentlemen's Furnishing Goods,

MADISON AVENUE COR. FORTY-FOURTH STREET
NEW YORK

© BROOKS BROTHERS

Clothes for the Horseman

Complete Equipment

for the Hunt

Send for "A Wardrobe for
HUNTING & BEAGLING"

BRANCH STORES
BOSTON
NEWBURY CORNER OF BERKELEY STREET
NEWPORT PALM BEACH

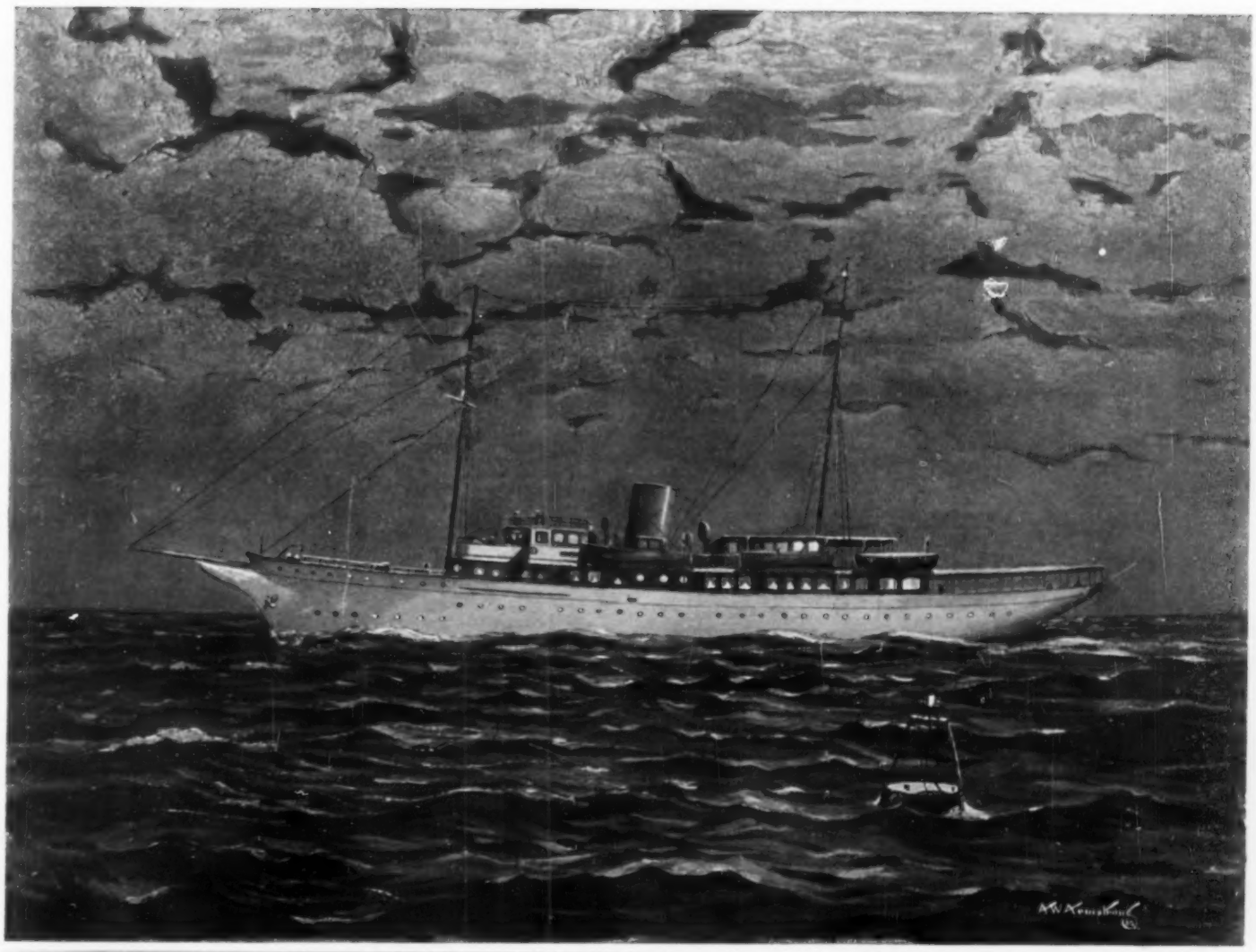
broadcasting, by which, roughly speaking, the telephone owner could get a radio program over his telephone. Now what, says the speculator, would prevent the Telephone company from segregating these non-telephone businesses, either under Electrical Research or some new company, and getting out a big stock offering in which holders of Telephone stock would probably get a preferential treatment and from which they could draw dividends diluted by no complex of social responsibility?

To all of which the Telephone company replies that it considers itself in the Telephone business, that it considers the profits derived from any non-telephone business as a part of what goes into the Telephone pot, and that any such profits, no matter how large, will be distributed on the same basis as if they were a result of telephone operation. In 1925, for example, Western Electric sold its foreign properties and in 1927 paid to A. T. & T. an extra dividend of $47,000,000. Here was a non-recurring, non-telephone profit, exactly the type of profit that could most readily be regarded as a bonus and distributed as such. But there was no distribution. The Telephone company in 1927 paid its regular $9.00 dividend, put the $47,000,000 into its surplus, and used it to run the telephone business. And in its 1929 report, the Telephone company went out of its way to discourage bullish interpretations of non-telephone activities by stating that although the business of Electrical Research was important in its own field, "its earnings obviously cannot be a material factor in an enterprise of the size of the Bell System." It is the policy of the company that all income is telephone income and, as such, subject to distributive restraint.

. . .

The persistence with which the Telephone company is regarded as holding back money which it will ultimately divide among its shareholders is simply an inability to grasp its way of looking at its business. Certainly such an inability emphatically exists in Wall Street. Explain to almost any professional investor the Telephone philosophy concerning the public as residuary legatee, and he will look at you with blank disbelief. Indeed, he feels sorry for anyone who can be so easily taken in. That a company can exist on any other basis than the making of the greatest and most immediate profit is a proposition which the speculative mind is congenitally unable to grasp.

Yet, from a broader standpoint than the excited individualism of a bull market, it is not so strange a proposition. As large corporations reach the point at which their management becomes virtually independent of their stockholders, it becomes possible for that management to take thought of itself in its institutional aspects. It is particularly true that a great and monopolistic utility such as the Telephone company may consider public opinion at least as important as stockholders' opinion. Mr. Gifford and his associates have been in the utility business for a long time. They have also been, for a long time, prosperous and powerful. If they give an investment return which is not sensational, they give also a return which is steady and sure. They have had the leisure to wipe the corporate sweat from their brows and consider themselves as a public institution as well as private enterprise. They can take a Main Street rather than a Wall Street attitude. It is possible for private capital to become social minded. The Bank of England, for example, is privately owned, yet the Governor of the Bank of England probably thinks more often of public welfare than of private profit. The Telephone company has not been a public institution for as long as the Bank of England. It is, however, one of the most seasoned of American utilities and certainly the greatest. There is no other company that could more appropriately regard the public as the residuary legatee of its benefits, and no other company that has acted on the belief that giving this consideration to the public is the best service for its stockholders in the long run. That the Telephone company does so regard its public is a statement which no one is compelled to believe. It is also a statement which it would be presumptuous for anyone to deny.



CAMBRIONA

Look at her! All the fleet grace of a racing packet, all the safety and luxury of a four-day liner are skillfully blended in this outstanding yacht . . . In every port, from Bar Harbor to Batavia, *Cambriona* will be the distinguished guest; but give her five thousand miles of open water and a snorting Nor'easter to prove her worth as a *ship!* . . . Nautically speaking, *Cambriona* is 236 ft. O. A. with a beam of 34 ft. Her depth is 19 ft., and she is powered with two 1100 H. P. Winton Diesels that give her a cruising speed of 15 knots for 7000 miles without refueling. *Cambriona* is also equipped with Sperry Stabilizer, Gyro Compass, Metal Mike, Fathometer and other advanced aids to navigation and control. She was designed by Cox & Stevens, Inc., and John H. Wells, Inc., and built by us for W. O. Briggs, Esq. of Detroit.

Distinguished yachts recently launched at the yards of The Pusey and Jones Corporation

RENE
Length 236 feet
Owner:
THE RENE CORPORATION
NEW YORK
Architects:
COX & STEVENS, INC.
JOHN H. WELLS, INC.

LOTOSLAND
Length 203 feet
Owner:
COL. EDWARD A. DEEDS
NEW YORK
Architects:
COX & STEVENS, Inc.

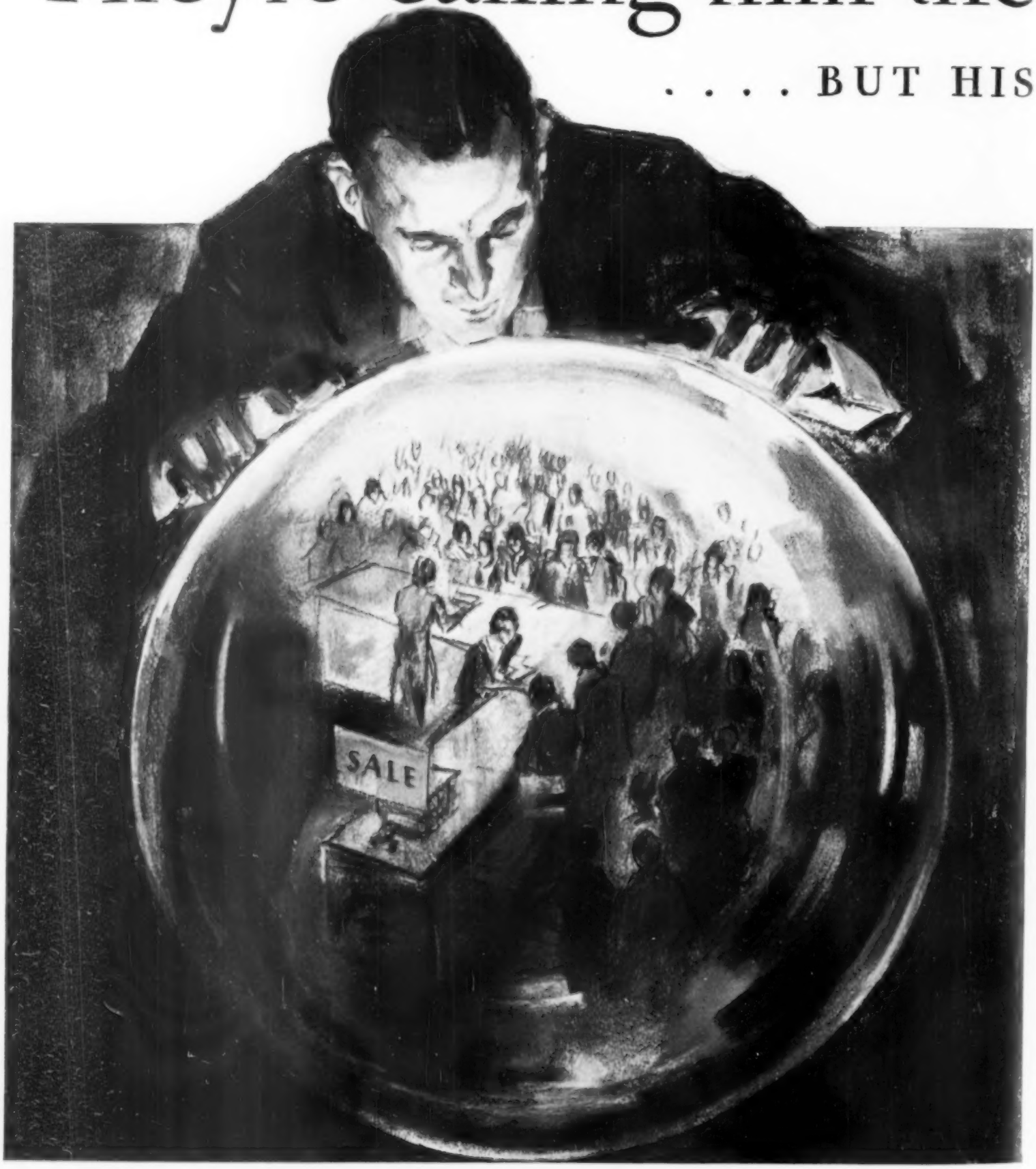
NAKHODA
Length 236 feet
Owner:
FRED J. FISHER, Esq.
NEW YORK
Architects:
COX & STEVENS, INC.
JOHN H. WELLS, Inc.

THE PUSEY AND JONES CORPORATION

Shipbuilders Since 1848—WILMINGTON, DELAWARE

They're calling him the

. . . . BUT HIS



Crystal Gazer

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it impossible to delay beyond that date.

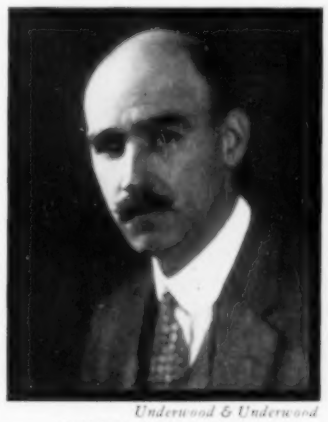
These various elements fixed the perimeter of an oddly shaped geometric solid, bounded on one side by 83,860 square feet of land, on another by $35,000,000, on another by the law of diminishing returns, on another by the laws of physics and the characteristics of structural steel, on another by the conical exigencies of the zoning ordinances, and on still another by May 1, 1931. And within these bounds the architects were to design their building. Even had it been possible to fill such a shape with brick and steel, the architects would still not have been free to do so. These were in addition to those obstacles and limitations and constraints introduced by their profession. The building must be efficiently planned. And it must be beautiful.

Selling Cells

"Plan efficiency" is the obvious name for the ratio of the net rentable space to the gross floor area. The owner (and the architect and builder with him) is engaged in manufacturing and selling office space. Office space is made up, as a honeycomb is, of cells. In New York the cells are spaces between columns placed about twenty feet apart along the exterior walls, and are twenty-five to thirty feet deep. Each has two windows and can be divided to form two offices with an anteroom, or can be left as one. A floor is made up of these units with their attendant services, their intercommunication, their exit facilities, and the space for the utilities, ventiducts, plumbing shafts, electric feeders, mail chutes, etc. serving the floors above and below. These cells are the units manufactured and sold. They can only be sold with their accompanying services. A plan is efficient if the ratio of saleable units to the total fabric which must be constructed in order to make them saleable is high. Plan efficiency usually runs to 65 or 70 per cent of the gross floor area. Considering the entire building (including boiler plants, elevator overruns, machinery and pits, penthouses, pipes, lofts, service employees' quarters, storage space, roof, etc.), 17.5 to 25 cubic feet may have to be built to build one square foot of rentable area.

The second limitation, imposed by the architect's profession, is the dimension of beauty. Since it exists only in the architect's esthetic conscience and artistic power, it can be, and very frequently is, ignored. Or, when not ignored, debased. Or, more simply, missed. One of the dogmas of skyscraper esthetics is that architectural beauty is not an adjective to be applied to the necessary structure of the design, but a possible inherent statement of the design itself. From which conclusion a large number of skyscraper architects have apparently deduced the further dogma that efficiency is inevitably and inherently beautiful and that the mere declaration of the function and construction of a building will, by some divine law, result in loveliness. Manhattan Island is covered with proofs to the contrary. The architecturally successful buildings are successful not because the economic and legal problems have been solved and the steel work expressed, but because the frank expression of the underlying construction and the logical solution of the economic problems have been presented in proportions which are themselves beautiful. Furthermore there is a considerable element of self-delusion in the demand for the complete statement of structural detail. No architect has yet

R. H. SHREVE



Underwood & Underwood

WILLIAM F. LAMB

seriously contemplated the exposure of his steel columns and girders on the outside walls of his building. Raymond Hood in his Daily News Building in New York, one of the most beautiful and one of the frankest buildings of our time, suggests, but only suggests, its internal structure. Its steel is covered by brick and tile. And no architect with a ground floor of shop windows to reckon with has so far dared to let his sheet of masonry balance upon his sheets of glass. In some way he gives it an illusion of support. The human eye and the human sense of gravity demand it.

The Board

Faced, then, with this plot, at this price, and pushed and pulled by all these various legal and economic and physical and esthetic considerations, the architectural firm of Shreve, Lamb & Harmon set to work to compose a rough sketch of the building to be built. But not in the isolation of its drafting rooms and not with the calm and quiet which the creative artist seeks to find. All that has been changed. The skyscrapers have changed it. Architects of these great buildings are no longer the lords of construction. They are members of the Board.

There was a time when you went to an architect as you went to Mr. Rufus Choate. You put your life and your purse in his hands and neither you nor your friends nor your mortgagees were permitted to question his esthetic judgment. Then structural steel appeared, and that much of the architectural function was amputated under the title of structural engineering. Structural engineers have their own society and their own code of ethics. They are forbidden by law to file plans for a building costing over $10,000 and are therefore always employed on big projects as aids to the architect, their fees for full designing service and approval of working drawings running from one-half of 1 per cent to 1 per cent of the cost of the building.

Further severances in the architect's functions took place as the height and size of buildings complicated the mechanical installations to the point where no architect was competent to design them. Heating and ventilating engineers, electrical engineers, plumbing engineers, and, above all, elevator engineers began to appear as necessary members of the general staff, usually retained, like the structural engineer, by the architect and paid out of his fee.

Again, the problems of construction became such that the 19th century practice of sole supervision by the architect was abandoned, and the modern builder (of whom George A. Fuller, who died in his forties as recently as 1900, was the first example) took over that part of the architect's field. The builder supervises the sub-contractors and coördinates the various trades.

And, finally, the owner interest in the construction of great commercial buildings, buildings erected solely to return a certain income on the money invested, was so immediate and concerned so many interests, as mortgagees, bondholders, banking syndicates, etc., that the skyscraper architect was forced to alter his conception of his calling and to accept, as his prouder predecessors never would have done, the interference of the owner interests in the most sacred and inviolable precincts of his design.

In the Empire State Building the builder, Starrett Bros. & Eken, was retained immediately after the architect. The job had been discussed with various reputable firms. On September 11, 1929, Paul Starrett and ex-Governor Smith lunched together; their verbal agreement was confirmed by letter on September 13; on September 20 the contract was drawn up and signed. By this agreement the builder obligated itself to complete the building by May 1, 1931, and also undertook to do the demolition, the excavating, the foundations, the masonry, the fireproofing, and the floor arches itself. These would be done at cost, and the builder's only remuneration for the job come through its fee.

The Consulting Board was now set up as follows:

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Architect:
R. H. Shreve—business head of Shreve, Lamb & Harmon
William F. Lamb—designer
H. R. Dowswell—specifications expert
I. Clavan—job captain in the architect's office
Builder:
A. J. Eken—vice president of Starrett Bros. & Eken in charge of construction
R. H. Hunter—vice president of Starrett Bros. & Eken in charge of construction

The following were available for consultation when needed:
Messrs. Smith, Raskob, and Kaufman—executive board of the owner corporation
Homer G. Balcom—structural engineer
Meyer, Strong & Jones—heating, ventilating, electrical, and elevator engineers
F. J. Brutschy—plumbing engineer

And as a member of this Board the architect began his work. Anyone who doubts whether an architect earns his fee has only to put himself in the position of Mr. Lamb at this point. The fee was probably large enough—but by no means so large as the amateur statisticians who are accustomed to figure on 6 per cent of the cost of the completed building would guess. The 6 per cent fee was established by the American Institute of Architects before the era of skyscrapers and is now outmoded as excessive for such work. The banking syndicates and business executives who pay for great buildings are accustomed to buy things at a known figure, and they dislike a practice which may mean that the substituting of one word for another in the specifications will jump the architect's fee $5,000 to $10,000. Consequently it is the practice of the great firms to charge a fee which will cover (1) office overhead; (2) the cost of these particular plans; and (3) a fair compensation to the architects. A lawyer might easily receive a fee of $500,000 for the reorganization of a $50,000,000 corporation. The architect's fee for the Empire State Building will almost certainly reach no such figure.

Mr. Lamb began by sketching various floors for the proposed building. There is a considerable reduplication of floors in a modern skyscraper, all the tower floors being alike in basic design, and all the lower floors, and only the set-back floors presenting individual problems. The tower floor plan is fundamental. It is the theme of the symphony. It is implicit in the ground floor design, for the central columns of the ground floor which, at that point, serve to space the elevator hatches will eventually, as they rise through the building, control the pattern of the tower. And it must be preserved in the complications and variations of the set-back floors. Consequently it is good architectural practice to fix the typical tower plan first and to work out the transposition from tower to ground floor plan through the set-back floors afterwards. This Mr. Lamb did. He did it, in all, some sixteen times. For each design the rentable floor areas were computed in the architect's office and the probable returns worked out by the real estate advisers of the Board. The height came down from Mr. Raskob's hoped-for hundred stories to the eighty odd fixed by the 36,000,000 permitted cubic feet and the elevator service. But still the problem had not been solved. There was too much dark space in the lower floors, and the Board was determined to manufacture no cell space it could not sell at maximum figures. Finally Mr. Raskob suggested that they might possibly make more money by building on only a quarter of the lot, and this desperate proposal was for a few days or a few hours seriously entertained. But not adopted. Between six o'clock in the evening of one September day and the two o'clock Board meeting of the next, plan number seventeen (known as Scheme K) was conceived. And Scheme K was the Empire State (see page 55).

By Scheme K, a base of only five stories will cover the entire lot. The ground floor will provide space for thirty-three stores around the exterior, and the center will be occupied by seven banks of elevators and the necessary stairs. Above the fifth floor there will be, in violation of all architectural practice of the day, a sudden set-back of sixty feet, practically enough in itself to satisfy the requirements of the zoning laws. And from that point the eighty additional stories of the building will rise almost sheer (the additional set-backs being insignificant in relation to the height of the shaft), nearly a

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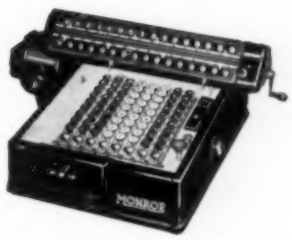

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thousand feet in the air. And above the roof there will be a 200-foot mooring mast for possible dirigibles (permitting the incoming trans-Atlanticist to slide down an elevator shaft into Fifth Avenue in five minutes instead of steaming up from Lakehurst, New Jersey, in 120). Utilities, including elevators, mail chutes, cable shafts, toilets, staircases, etc., will be grouped in a central core tapering toward the top of the building.

This plan appeared to consider and solve each of the elements of the complex problem presented. It was undeniably satisfactory to the eye. The great shaft rising clear upon its pedestal of five stories had a freedom and authority that the ordinary, crowded, and elbowing spire, with its air of craning above its neighbors, did not have. The "plan efficiency" was high. One million, nine hundred and twenty-one thousand, eight hundred and eleven square feet of net rentable area stood to the gross floor area in the relation of 69 to 100, and only 16.11 cubic feet of structure were required for each square foot of rentable area. The requirements of the law were satisfied and more than satisfied: no attempt had been made to fill every angle of the permissible legal "envelope." And the economic requirements had been met. In spite of the sacrifice of space to light (or perhaps because of it, if the higher rental rate is borne in mind) it was estimated that this building would return about 10 per cent per annum upon the total amount invested. It does not follow that the height of eighty-five stories was the exact "economic height." There is a prestige value in the possession of the tallest structure in the world, especially when that structure is apt to remain the tallest structure in the world for a long time to come. And the Empire State Building is extremely apt so to remain. You can build safely above 1,200 feet. The Empire State itself could have gone much higher. But the margin of gain in rentable area as you go up above the sixtieth floor is, in New York, so slight that the race for roof altitude at 1,000 feet or more becomes merely fantastic: a pure act of pride.

Mr. Lamb's sketch also met the time requirements. The builder objected to a tentative plan for the construction of a department store in the lower areas on the ground that the necessary construction to eliminate columns would take too long, but otherwise accepted the plan. And the building was under way.

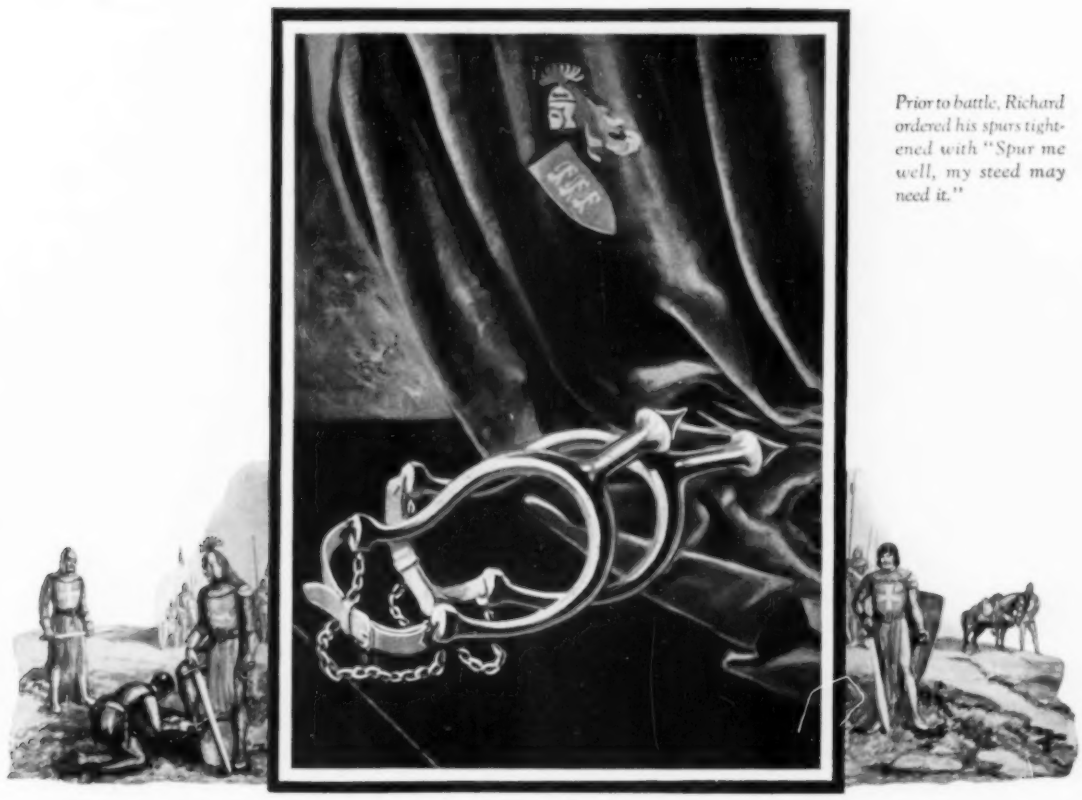
As yet the old Waldorf stood upon the plot.

The mortgage

The first act of the Board was to call in a few known and reputable sub-contractors and take their estimates in order to establish a basis for the rough computation of costs. Next this tentative estimate and the architect's preliminary sketch were handed to the Metropolitan Life Insurance Company with a request for a mortgage loan. The Metropolitan turned the documents over to its own architects and engineers. A few days later ex-Governor Smith dropped in. And in thirty minutes a $27,500,000 mortgage loan had been arranged at 5½ per cent. The syndicate then took a second mortgage bond issue of $13,500,000 at 7 per cent and an issue of 100,000 shares of preferred stock of no par value paying 6 per cent. One hundred thousand shares of common were then issued to the holders of the preferred. Carrying charges during construction, i.e., to May 1, 1931, will actually total, on the two mortgages, $2,132,500.

The next act of the Board was to plan its campaign. Demolition was to start at once. Starrett agreed to finish that by February 15. Excavations and foundations which would start while demolition was still in progress would be finished, and the builder would be ready for steel March 15. Therefore the fabrication of the basic steel must be finished and first deliveries made by that date. Therefore the steel contract must be let at least two months earlier—say by the middle of January—in order to give the erector, the fabricator, and the mills time. Therefore a preliminary plan for bidding purposes must be ready by November 15.

And all this time the materials to be used are being studied for color, texture, cost, durability, upkeep, availability, etc. A new chrome-nickel steel (the product of Central Alloy Steel Corp. and of Allegheny Steel Company) is to be used around the windows on the exterior of the Empire State. But no one knew, until a grand council of war had been held, in what dimensions the sheets could be rolled and fabricated or how they could be



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Spurs of Richard. Painted by Ludwig Gassner

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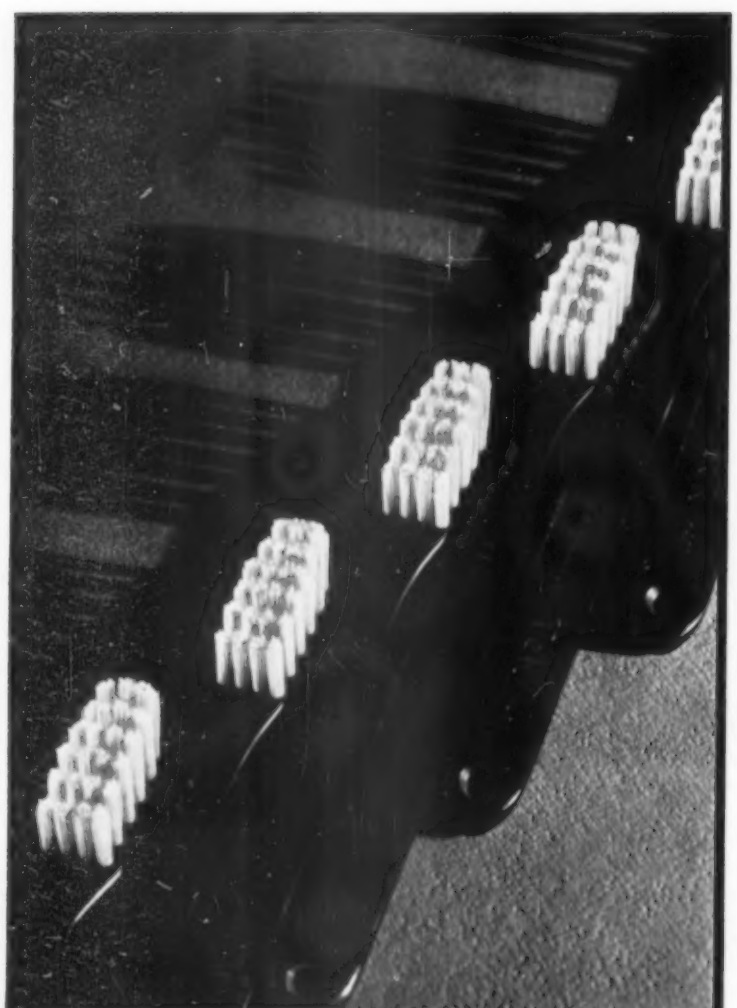

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jointed or how attached to the metal frame of the building or even to what extent the bright finish would prove durable.

The relation between the architect and the structural and mechanical engineers must, in all this work, be very close. A good architect knows the general size of an elevator hatch. He can usually make a fairly accurate guess as to the number of elevators required. But when it comes to determining the actual installation to be made, the architect cannot possibly work alone. Steel design is involved in the elevator problem as well as foundations, hatchways, clearances, and electric service. In the Empire State it was proposed to install more and larger and faster elevators than any previously known. The contract was let to the Otis Company and that company immediately set to work through its leading technician, Mr. David Lindquist, and with the coöperation of Mr. Bassett Jones, of Meyer, Strong & Jones, engineers, to perfect an automatic spacing and timing device which would prevent the simultaneous arrival of several elevators at the same floor at the same time. The elevator contract amounts to $3,000,000 and certain parts of the completed job, in the opinion of Mr. Lindquist, will cost Otis three times what they receive because of the experimental work required. The loss will be charged off to necessary laboratory experience.

Fundamentally, steel

As to the fundamental and primary question of the steel itself, the architect is in a somewhat anomalous position. Structural steel is the means, the cause, and the occasion of his work. Without it neither he nor his buildings would exist. And yet its use is, literally, beyond him. He knows the usual sizes of steel fabricated and employed, the best spacing of bents and size of bays. He knows that his building will be better wind-braced and stiffer if his steel lines run straight through the building horizontally and vertically than if they stagger around the shafts, and that the fewer transfer girders he is obliged to use the better. But what weights of steel will carry what loads and what precise lengths of girders and columns will be required throughout, he cannot tell. He turns, therefore, to the structural engineer. The structural engineer advises him as to position and dimension of all steel work and "designs" the steel. If the architect is experienced and his proposed skeleton conforms (as Mr. Lamb's most successfully did in the Empire State) to engineering requirements, the structural engineer's work is comparatively simple. If the architect is inexperienced, the engineer may be obliged to tear down and reconstruct the entire plan.

These steel specifications go from the structural engineer to the erector, who will by now have been employed. The erector is a specialized builder who, as his name implies, *erects* the steel. He may or may not fabricate it himself, but his derrick crews and riveting gangs put it up. He is the hero and the noisy villain of the construction drama. The Empire State contract went to Post & McCord in January. By that time the architect's plans for basement and sub-basement were ready, and by January 15, 1930, Mr. Balcom, the structural engineer, had sent Post & McCord the first steel plans. Thereafter steel design drawings were forwarded at frequent intervals, a few floors at a time. The program adopted by the Board called for the beginning of erection on April 1, 1930, and the completion of roof framing over the eighty-fifth floor on the first of September. And between the forwarding of Mr. Balcom's design and the erecting of the steel lay (1) the preparation of shop drawings in the bridge shop; (2) the checking of those drawings by engineer, architect, and Board; (3) the forwarding of these drawings to the mills; (4) the rolling of the steel shapes required; (5) the delivery of the steel to the shops; (6) the drilling, punching, assembling, riveting, milling, finishing, painting, and shipping of the "members," in the bridge shop; (7) the delivery of the material to the job. And at every stage of rolling, fabricating, and erecting the material is inspected—first, chemically at the rolling mill and then physically for tensile and bending properties after fabrication.

There were 58,000 tons of steel to pass through this routine, and the first of it was due on the job two and one-half months after the first steel drawings went to the erector. Also 15,000 tons a month were required the first two months. It is small wonder the American Bridge Company split its contract with its greatest competitor, McClintic-Marshall,

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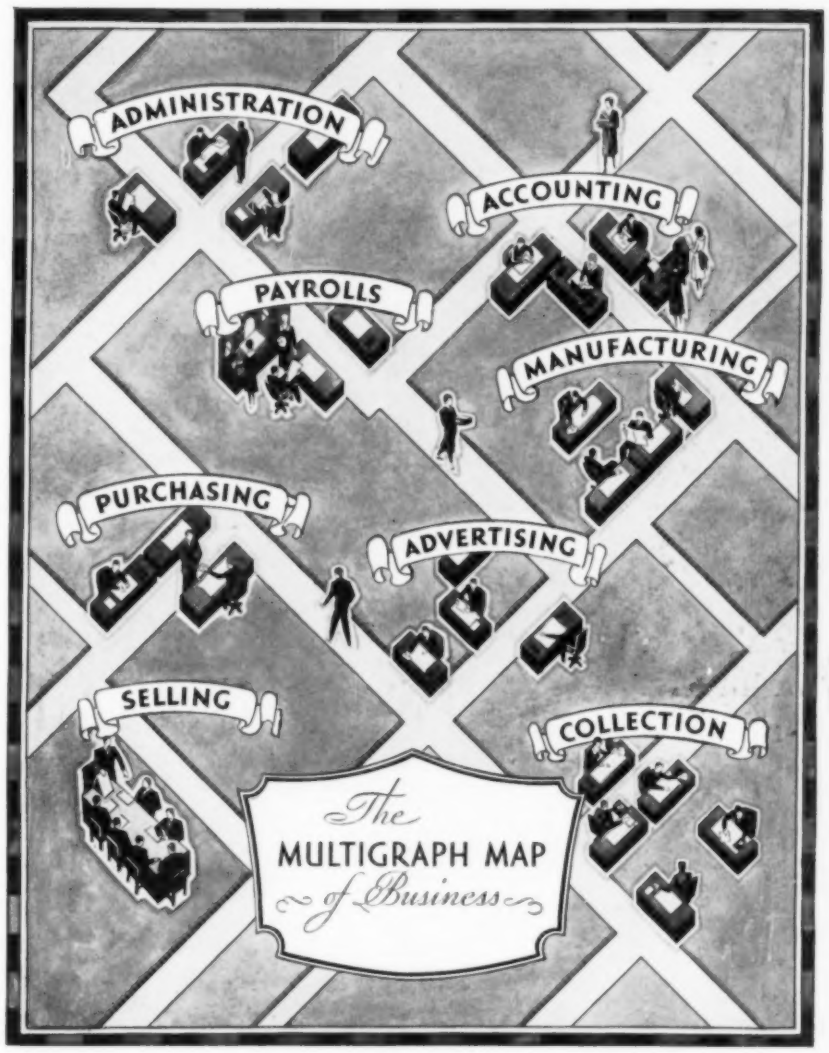

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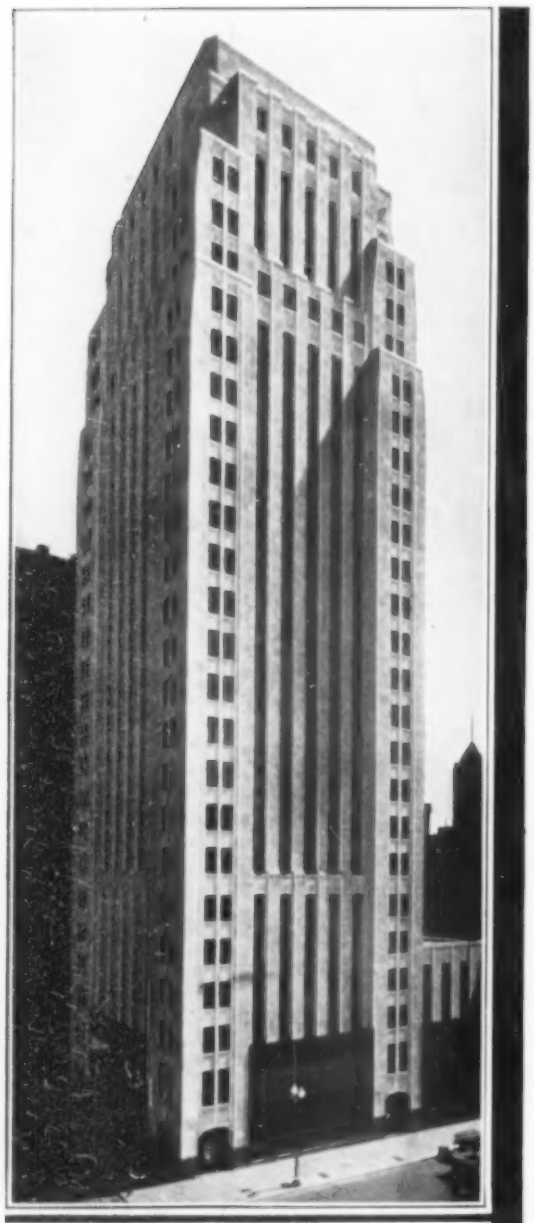


FOR YOUR NORTHWEST HEADQUARTERS

CONSIDER the New Rand Tower, Minneapolis, as your new Northwest business address. There are distinct advantages: efficient office space, a location in the heart of the city's banking section, an address of prestige in a building which has won international acclaim for its beauty.

THE RAND TOWER
MINNEAPOLIS

Address
The Rand Holding Company, Minneapolis, a unit of The Rand Companies, Inc.

each taking alternate groups of six or eight floors. The steel itself was rolled by the U. S. Steel Corporation.

The steel contract is obviously the basis of all others. No further plans can be made until the date of the first delivery of steel is fixed. But that being known and the rate at which the erector can put up his steel (say four floors a week), the other contracts follow in the order dictated by past experience, and the final progress chart of the building is made up. In the Empire State Building job the contracts following steel were let in this order: window sash, limestone, architectural iron (stairs, etc.), hoists, watchman and fire alarm service, exterior stainless steel, elevators, elevator inclosures, etc., etc. These were all lump sum contracts. Only reliable firms were asked to bid, and the lowest bidder was therefore awarded the work.

The limestone (for exteriors) was contracted for by four companies as no one company was large enough to get it cut and erected in time. But it is remarkable enough that four companies could do it. When Mr. Louis S. Weeks of New York put up the I.T.&T. building in Madrid and asked for bids for the delivery of the stonework, the shortest period of time he heard mentioned was seven years.

As soon as the sub-contractors and the manufacturers of the required materials are known, the architect's full-size drawings go forward. Having come so far, the theoretic building exists in all its details. Its construction chart carries it forward in time as its plans and profiles carry it upward in space. The men who will work upon it are known in numbers if not by name (there will be 5,000 or 6,000 working on the Empire State at the peak of construction). Its smallest units exist in life-size symbols, and its materials are specified to the last chemical component they shall contain. Nothing remains but to bring these men and these materials together in their prearranged locations. If the Board has done its work well, they will fall as precisely and logically and swiftly into place as the fragments of a photographed explosion when the moving picture ribbon is reversed.

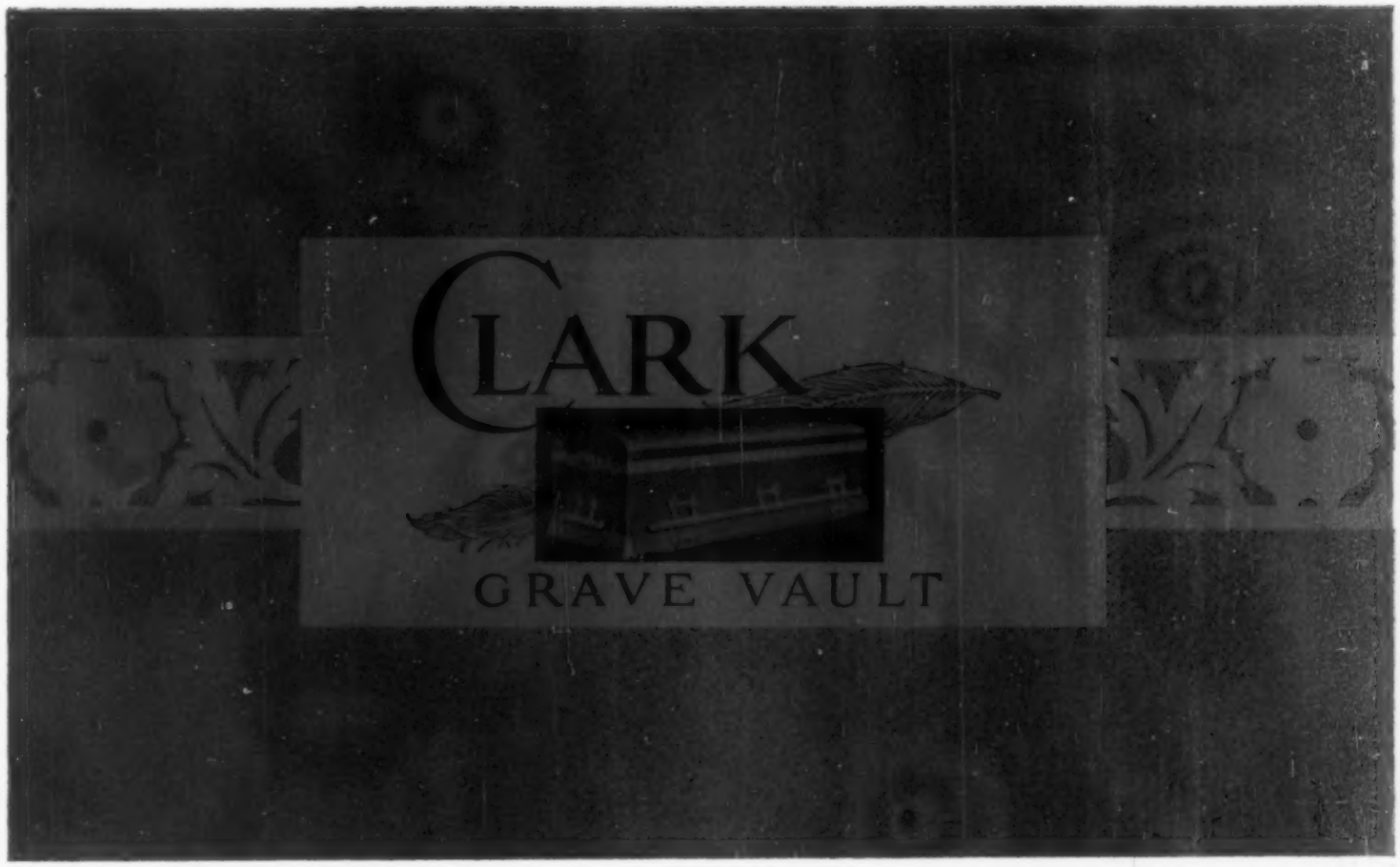
Enchanted Tiles

[*Continued from page 77*]

that several of Mr. Mack's neighbors have built their spring boards to match. Another plunge which illustrates the western penchant is that of Mr. Earle C. Anthony of Los Angeles, who distributes Packards throughout California. It is a visceral shape in turquoise, with harbors, bays, and narrows.

By way of contrast, in the dignified Classic strain, there is the impeccable Mr. Charles Platt's design for the Manhasset, Long Island, estate of Ralph Pulitzer, publisher of the New York *World*. The owner now has more opportunity than ever to enjoy this serene plunge. Last February, prompted by ill health, he relinquished his active publishing duties to his younger brother Herbert who, although he was favored by his father with six-tenths of the elder Pulitzer's newspaper properties, had thus far kept more or less away from the presses. In the English manner, the leaf-spotted, richly patined brink belonging to Dr. Charles Briggs of Cleveland, son of the late Dr. C. E. Briggs, medico and copper financier, seems as though it had occupied its tranquil inclosure for centuries. Such gracious household accessories as this and Mr. Pulitzer's are plentiful, though few are so exquisite in detail.

No discussion of swimming pools should neglect Florida, whose expansive beaches are particularly well supplemented by artificial shores. Our one example should more than suffice. As France has its château of Chenonceaux built above the miniature river Cher, so Florida has the great Miami mansion of the late James Deering, farm implement man who merged with McCormick's. Beneath it is a thoroughly civilized twenty-eight-foot grotto whose walls are imbedded with sea shells and pebbles. Balustrades of ropes assist the bather into four feet of water. The grotto forms part of a swimming pool which extends another twenty-eight feet into the open air, offering bathing facilities as ornate as any you are likely to discover.



THE magnificent Solid Copper Clark Grave Vault combines a degree of de luxe beauty with a degree of dependable protection never before attained in a vault • Fully in keeping with the funeral of pretentious appointments, a fitting protection for the costliest casket, the Solid Copper Clark is an imperishable expression of unfailing love and modern standards • Unaffected by the elements, it carries a guaranty unlimited by time. In its construction solid copper, 10 gauge in thickness, is used, the handles as well as all attachments are also of copper. It weighs approximately 600 pounds • Sides and top are of one compact continuous piece without welding along the sides. The soft mat finish with etched floral design in polished copper gives a dignity and beauty unrivaled by any vault • It embodies the proved principle of Clark construction—that of the diving bell—found in all Clark Vaults. This principle, backed by quality materials and exacting workmanship, has made Clark recognized and preferred as the perfect vault protection for more than a quarter of a century • Better funeral directors everywhere can supply the Solid Copper De Luxe Clark as well as the following models: Gray and White Lacquer, Copper Bronzed, Gold Bronzed—Silvertone and Copper Finish, Cadmium Plated by the Udylite Process • "Less than Clark complete protection is no protection at all."

THE CLARK GRAVE VAULT COMPANY, Columbus, Ohio

Western Office and Warehouse, Kansas City, Mo.

SOLID COPPER CLARK GRAVE VAULT

Luxurious Warmth

Blows Hot when it's Cold . . . Blows Cool when it's Hot

at the touch of a finger with

HāDees
HOT WATER
CAR HEATER

The HaDees hot water car heater gives you the same control of temperature in your car at all times, as your home hot water heating plant gives you in your living room.

The basic principle of HaDees — proved sound and true by years of experience — is developed to its highest efficiency in a compact, beautifully designed chromium finished unit.

Hot water — fresh-air — heat, circulated from the hottest point of the engine, is distributed by electric fan at will, in any degree, in any or all directions — at once, by a mere touch of the finger . . . and the electricity used is no more than would operate a tail light.

Your control of the temperature in your car is absolute and complete whether you drive in the bitterest of sub-zero weather or the mildly chilly days and evenings of spring, summer and autumn. Use it in summer for forced cooling ventilation.

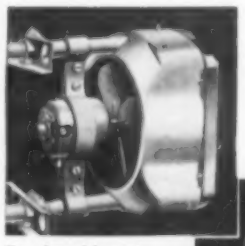
There is a HaDees Heater to fit every size car. Front dash models for Sedans and Coupes, a special model for Ford cars, and a DeLuxe Rear Seat Heater.

See your nearest dealer.

HaDees non-freezing fluid, the never-failing, economical, all-winter radiator fluid.

Ask your dealer.

Every HaDees Heater guaranteed by the world's largest bonding house, the National SuretyCompany. Their Gold Bond Guarantee of quality adds no extra cost to you.



Fan-forced heat in all models.

Front dash installation showing heat deflector.

LIBERTY FOUNDRIES COMPANY, *Rockford, Ill.*
(A Division of Burd Piston Ring Co.)

HāDees HOT WATER CAR HEATER

PATENT NOS. RE17131 and 1746906

Gold Continues Move to France

THE U. S. last month found itself definitely in the ranks of the gold-losing countries, saw also every prospect of continuing to lose gold for some months to come. Most of the gold traveling abroad was headed for France, which, whether or not it is hoarding gold, has certainly continued to accumulate it. In July of 1929 the Bank of France showed gold holdings of 36,786,000,000 francs. It closed July, 1930, with gold holdings of 44,911,000,000 francs. The U. S., with a gold supply of about $3,000,000,000, is still far in the lead, France having about $1,750,000,000 and England about $750,000,000. In smaller figures, for every U. S. dollar in gold, France has about fifty-eight cents and England about twenty-five cents.

Failure of U. S. industry to recover after the market collapse of last fall was virtually certain to produce a flow of gold from this country to France. During 1928 and 1929, when our bull market was at its height, we shared with France the capacity to attract gold. But the end of our bull market was also the end of our position as gold magnet, and France has at present little competition for the distinction of great gold-charmer. Our interest rates are no longer high; our industries are no longer feverishly expanding their capital structure; there remains no compelling reason why the world's money should come to America.

Why that same money should continue to be so predominantly Paris-bound is not so easily determined. In London (which until now has been the unwilling source of most of the French gold supply), France is accused of piling up an unnecessary gold reserve, and much British and European depression is blamed upon France's alleged activities in gold-cornering. The French, on the other hand, deny any manipulation; insist, indeed, that they want no further gold imports since the existing supply already threatens an inflation. They maintain that a considerable portion of their gold income still represents French capital invested abroad during the post-War demoralization of French finances, and point out that the tourist business (which has reached the proportions of a great French industry) produces a seasonal inflation which is certain to end with the summer that caused it. France is today one of the very few countries in which food prices, general retail values, and the cost of living are increasing. This acceleration of French industry, compared to a general deceleration of world industry, is the least sensational but most logical explanation of the flow of gold toward France.

Meanwhile, there is certainly nothing remotely approaching a gold famine in the U. S., and a good deal more gold can depart from American shores without much influencing interest rates in this country. It is also a great deal better for New York rather than for London to be the chief contributor to the French gold supply. Release of pressure on London is indeed the most encouraging international significance of the current movement in gold.

Trust Shares Off 25 Per Cent

A SHARE of stock in an investment trust represents a certain fractional ownership in the securities held by the trust and nothing whatever more. If the trust should liquidate, should sell its holdings, the owner of each of its shares would receive his fraction of the cash received. The market value of a share of stock in the trust, therefore, should in theory equal liquidating value.

A year ago, however, stock in investment trusts sold on the market at a premium of anything up to 100 per cent over the liquidating value. There were two possible explanations: one, that in the bull market of a year ago any stock was worth more than its value; two, that the judgment of the trustees was so sound and their skill in investment so great that a share of stock in their hands was worth a quarter more than it would be worth in the hands of the citizens.

This year stock in investment trusts sells on the market at about 25 per cent below its liquidating value (as appears from the list below). There are still two explanations. But it is easier to believe that in a bear market any stock is worth less than its value than to believe that the judgment and acumen of these same trustees has now so altered that a share of stock in their hands is, by that fact alone, deprived of a considerable fraction of the value it would have in the ordinary investor's pocket. In the table printed below are listed some important investment trusts, their liquidating value (in most cases as of June 30), and their market value on the same day:

	Liquidating value	*Market value*
American European Securities	$48.83	$34.50
American Founders*	16.85(A)	12.75
Blue Ridge Corp.	9.84	8.625
Capital Administration (A shares)	22.15	14.25
General Public Service	28.08	34.00
Goldman, Sachs	30.16	23.50
Insuranshares Certificates, Inc.	13.31	10.00
International Carriers	17.53	13.00
International Superpower	43.34	33.00
Investors Equity	26.36	16.00
Lehman Corp.	89.86	70.25
Second National Investors	19.61(B)	8.25
Third National Investors	39.42	25.125
Fourth National Investors	45.39	31.00
Prince & Whitely Trading	12.29	13.50
Reliance Management	13.32	10.125
Reliance International	9.25	8.00 bid
Sterling Securities (A)	6.26	10.50
Tricontinental	15.45	12.125
Ungerleider Financial Corp.	49.52	25.00
United Founders*	27.74(A)	31.25
U. S. and Foreign securities	26.65	17.62
Vick Financial	9.26	6.50

A—On a parent company basis, taking holdings in subsidiaries at market.
B—Giving effect to possible conversion of preferred and excluding possible exercise of options outstanding on common.
* *Figures as of May 31, 1930.*

Beth's and Other Salaries Probed

SPECIFICALLY the discussion was started by Cyrus S. Eaton. His reason for it was to offer another point against Youngstown Sheet & Tube's merging with Bethlehem: Bethlehem pays its executives too much. Doubtless it gave Mr. Eaton great pleasure to uncloak, in the courtroom, that thing about which all corporations are reticent. Eugene Grace, asked what his salary was, gladly said, "$12,000." This was patently absurd, so the court probed into his bonus arrangements, learned the vague fact that 1.5 per cent was the factor used in determining the Grace bonus.

Everyone guessed that it was 1.5 per cent of the company's net earnings, and that last year it came to $738,000. A few days later, Mr. Grace testified that the actual amount was $1,623,753. The 1.5 per cent was correct, but it was the minimum of a sliding scale.

As startling as the size of Mr. Grace's bonus was the subsequent disclosure that Chairman Schwab receives a salary of only $150,000 a year, is entitled to no bonus. During 1929 the total Bethlehem bonus distributions were:

	Bonus	*Salary*
E. R. Grace, president	$1,623,753	$12,000
H. E. Lewis, vice president	375,784	10,000
C. A. Buck, vice president	378,664	10,000
Quincy Bent, vice president	378,664	10,000
F. A. Shick, controller	216,729	6,000
R. E. McMate, vice president and secretary	134,538	6,000
J. M. Cross, vice president	110,077	6,000
J. H. Ward, vice president	54,305	3,000
C. R. Holton, dir. of purchases	48,923	10,000
J. M. Larkin, assistant to president	36,692	10,000
A. Johnston, secretary	24,462	10,000
W. J. Brown, assistant treasurer and secretary	18,345	7,500
J. P. Bender, treasurer	18,345	7,500
W. M. Tobias, former director of purchases	6,025	6,000
	$3,425,306	$114,000

An amazing disclosure, its result was a general inquiry into salaries. But little can be learned. If Mr. Grace is worth $1,635,000 a year—

what was the late Judge Gary worth? It is understood that his salaries plus bonuses never exceeded $500,000 a year, although when the government was attempting to dissolve the Steel Corporation the figure was popularly supposed to be nearer $1,000,000. In this connection, there stands John D. Rockefeller's reply as to whether $100,000 was too much: "You may think so, but if U. S. Steel would like to dispense with Mr. Gary's services, I stand ready to make him an offer of $1,000,000 a year to work for Standard Oil."

In the motor industry, big salaries are frequent. When Walter Chrysler worked for John Willys, he received $750,000 a year, plus bonuses said to carry it over $1,000,000. In General Motors, executives become rich not through salaries or bonuses but the profit-sharing Management Corp. Thus in 1928 Mr. Raskob was quoted: "They say that Carnegie made thirty millionaires over a period of years. Well, we made eighty millionaires in four years in General Motors."

Walter Teagle, in 1923, received a salary of $125,000. Between 1919 and 1924 the spectacular William M. Wood of American Woolen took $1,000,000 a year and made the company pay his income tax. George Gordon Crawford, whom Jones & Laughlin Steel recently snatched from U. S. Steel, is said to have a $250,000 a year contract. Walter Gifford is reported to receive $250,000, which is generally considered the limit in a standard business. Sir Henri Deterding has a life contract (signed thirty years ago) giving him £300 a year plus 3 per cent of the net profits. This runs to almost $5,000,000 in a good year and thus exceeds Mr. Grace's stipend.

Perhaps one reason why this disclosure concerning Mr. Grace caused so much excitement is the present state of business, which makes large figures loom much larger. For Mr. Schwab has many times referred to his "million-a-year-executive"—a fact which should disprove the story that Bethlehem's vice presidents were thrown into a terrific state of frenzy at learning how much their chief received. Calm amidst the discussion was the pontifical New York *Times*. Its comment:

"The fact that Mr. Grace received such compensation as an operating executive came as something of a shock to many in the financial community. It required Mr. Grace's own testimony to convince the sceptics.

"For the first time, compensation in industry has reached a level comparable with that attained in the motion picture business. Mr. Grace, it develops, receives as much as such luminaries as Douglas Fairbanks and Charlie Chaplin. This comparison could not be avoided."

Smelters Grows; Metals Decline

FEW American tycoons are as internationally-minded as the Brothers Guggenheim, masters of the American Smelting & Refining Co. "Smelters" has properties in Mexico, South America, and Newfoundland, as well as in Texas, Arizona, Colorado, and Utah. And, because the Brothers Guggenheim are alert opportunists, last month Smelters' influence was extended to Queensland, Australia, and Africa —though chiefly Australia.

Control of Australia's Mt. Isa, whose heart is a heart of lead, rests in England's Mining Trust, Ltd. Last month Mining Trust needed some cash. Smelters, in return for a "substantial interest" in Mining Trust, furnished enough cash to develop the Mt. Isa properties and to construct a new refinery, and agreed to let Mining Trust use the efficient Smelters technical staff for at least ten years. Also, through Mining Trust, the Guggenheims finally have a small stake in Rhodesian copper.

Meanwhile, African copper loomed larger against the clouded horizon of the American industry. New refineries for African metal were talked of in Liverpool and Hamburg. The potent Union Minière du Haut-Katanga (approximately 60 per cent owned by the Belgian Government) acquired an 18 per cent interest in Europe's largest brass manufacturing plant, the Hirsch Copper & Brass Works of Germany, thus falling into an alliance with Lord Melchett's Imperial Chemical Industries, Ltd., holder of 25 per cent of Hirsch stock.

These developments transpired in the face of a heavy, dull metal market. Copper on July 22 reached a new low of eleven cents, the lowest since 1902, although two cents above 1894's poorest price. Stocks of copper on hand continued surprisingly large, and there were many indications that production may be curtailed even further.

Tin continues in worse straits than the red metal. Almost 100 Malayan mines have closed down for at least two months. The stocks of tin on hand are tremendous, and the tin companies have not, like the copper companies, large cash reserves. In London an association is being advocated by a large accounting house. Its members will not be tin companies, but their shareholders.

Lead, in which production has been curtailed, remains in a better position, statistically, than other metals. Reflecting this, prices are firm and show signs of having seen the bottom.

Earnings Drop 23 Per Cent

Average net earnings of some 250 important companies showed a decline of approximately 23 per cent for the first half of 1930 as compared to the first half of 1929. Below are listed comparative earnings for some representative companies:

	1929 first half	*1930 first half*
Advertising and Printing	*(Estimated to the nearest 1,000)*	
Curtis Publishing	$11,848,000	$12,292,000
Butterick	440,000	373,000
Conde Nast	759,000	857,000
Amusement		
Paramount Publix	5,131,000	8,434,000
Radio-Keith-Orpheum Corp.	630,000	2,166,000
Apparel		
Durham Hosiery Mills	151,000	51,000
Adams Mills	442,000	413,000
Real Silk Hosiery	1,041,000	601,000
Automobiles		
General Motors	151,860,000	98,355,000
Hupp	2,831,000	509,000
Packard	14,675,000	5,526,000
Willys-Overland	4,155,000	152,000
Studebaker	11,184,000	2,567,000
Chemicals		
Atlas Powder	1,195,000	725,000
Commerical Solvents	1,798,000	1,498,000
Hercules Powder	2,036,000	1,598,000
U. S. Industrial Alcohol	1,696,000	552,000
Copper		
Calumet & Hecla Copper	2,477,000	574,000
Department and Chain Stores		
F. & W. Grand-Silver Stores	699,000	792,000
Walgreen	1,506,000	913,000
J. C. Penney Company	3,725,000	3,407,000
Food Products		
Penick & Ford	950,000	1,001,000
Corn Products Refining Company	6,866,000	6,641,000
Coca-Cola	6,492,000	7,182,000
Hershey Chocolates	4,225,000	4,254,000
National Dairy Products Corp.	11,601,000	12,947,000
Household Products		
Procter & Gamble	19,149,000	22,210,000
Lambert	3,809,000	3,764,000
Auto-Strop Safety Razor	371,000	723,000
Kelvinator	1,442,000	1,414,000
Maytag Company	3,236,000	1,382,000
Iron and Steel		
Interlake Iron	1,049,000	1,298,000
Jones & Laughlin Steel	11,306,000	6,959,000
McKeesport Tin Plate	1,685,000	1,514,000
Otis Steel	2,798,000	1,210,000
Acme Steel	1,732,000	689,000
U. S. Steel	96,011,000	67,905,000
Bethlehem Steel	20,812,000	17,769,000
American Metal Company, Ltd.	1,658,000	1,272,000
Machinery and Machine Equipment		
Bucyrus Erie	1,505,000	1,507,000
Worthington Pump & Machinery	1,099,000	1,053,000
Superheater	2,210,000	2,436,000
Office Equipment		
National Cash Register	4,407,000	1,686,000
International Business Machines	3,214,000	3,654,000
Oil Producing and Refining		
Prairie Pipe Line	10,975,000	10,550,000
Transcontinental Oil	1,716,000	2,363,000
Skelly Oil	3,199,000	1,284,000
Continental Oil	2,201,000	2,644,000
Phillips Petroleum	8,511,000	10,201,000
Barnsdall Corp.	4,115,000	3,367,000
Railroad Equipment		
General Railway Signal	1,049,000	1,170,000
Westinghouse Airbrake	4,048,000	4,015,000
Restaurants		
Lessing's Inc.	45,000	45,000
Child's	420,000	668,000
Shoes and Leather		
U. S. Leather	1,969,000	196,000
Endicott-Johnson	439,000	1,223,000
Melville Shoe	727,000	956,000
Textiles		
United Piece Dye Works	1,933,000	1,911,000
Industrial Rayon	694,000	900,000
Pacific Mills	663,000	1,139,000

The Welland Canal

FOR fourteen years the Dominion of Canada has been digging a canal. It is a very complicated and a very superior canal. And also a very expensive one. For by the time it opens on Labor Day, it will have cost $122,000,000.

There was an old Welland Canal. But the old Welland (built in 1829) was a tortuous ditch with twenty-five locks, enabling water traffic to avoid Niagara Falls in passing from Lake Erie to Lake Ontario. It did a rushing business; the great grain year of 1928 saw 131,531,000 bushels go through. But this traffic was created only by unloading grain from ships, placing it on canal barges that took about sixteen hours for the trip. For 90 per cent of the freight ships on the Great Lakes could not pass through the Welland locks.

The new canal not only can handle any ship on the Lakes, but is prepared for the day when ships will be longer, wider, deeper. Its tremendous locks, one pair of which is shown in the adjoining column, are 820 feet long, compared to 270 feet for the old, 80 feet wide against 45, 30 feet deep against 14. Whereas the old canal had 25 locks, the new has only 7. Each of these has a lift of 46½ feet and can be filled in 8 minutes, which is a rate of 5½ feet a minute. Thus the 326½ foot inequality between the levels of the two lakes becomes unimportant. Boats carrying a 600 per cent greater cargo than the old barges can make 100 per cent better time through the canal.

The engineering difficulties involved were great, and among canals the Welland is so nearly superlative as to deserve comparison with the Panama and Suez. One problem was what to do with the Welland River, which threatened to interfere with the canal's straight line. At the cost of $2,500,000 it was placed in a syphon culvert seventy-five feet below the canal.

The presence of this canal, ready for the great grain movements of the fall, will alter the channels of grain commerce. Much grain which previously would have gone to Buffalo for shipment to U. S. ocean ports will now be diverted to the St. Lawrence. Already vast elevators are being built along the upper river. Also, when, if, and as the St. Lawrence channel receives its deepening, the Welland will be a vital link in the triumphant passage of grain ships from upper Superior to the sea.

P. & A.

Ewing Galloway

Faces of

To command a 1,400-mile gasoline pipe line, Daniel James Moran, president of the Continental Oil Company, has been appointed president of the Great Lakes Pipe Line Co. (jointly formed by Barnsdall Corporation and Continental Oil Company).

Underwood

Joaquin Rodriquez, nicknamed "Cagancho" (nightingale) because his father was a great Flamenco singer, is Spain's most popular bullfighter. No longer seen in situations like that in the picture, he is now trailed through the streets by adorers. He will henceforth fight under the taurine code signed last month by King Alfonso. The code will permit him to face bulls maddened by fire darts that explode under the skin. This practice, of much antiquity in Spain, was for a time discontinued under the dictatorship of the late Primo de Rivera as being inhumane.

Keystone

As director of the new Veterans' Administration, Frank Thomas Hines will spend more than any other U. S. department head—$800,000,000, equal to $1.00 out of every $5.00 of U. S. appropriations.

Underwood

W. S. Farish is president of the Humble Oil & Refining Co. and recognized as one of the best production men in the oil industry. Belying its name, the Humble Pipe Line Co. (operating subsidiary) had the largest net — $27,260,314 — of the thirty-seven pipe line companies in the U. S. in 1929.

International

In 1922 nine gangsters robbed Arthur W. Cutten of the Chicago grain market and the New York Stock Exchange. Mr. Cutten pledged: "I am going to run these men down if it takes every dollar I have. They locked me in a vault . . . they treated my wife brutally!" His purpose seems to have been fulfilled. Last month one Casper Rosenberg, alleged ninth and last of the gang, walked into the State Attorney's office of Dupage County, Illinois, and surrendered himself. Mr. Cutten presumably is content, for he has been quoted as considering his man-hunting activities far more important than his various market successes or problems.

Many a woman could be the wife of a president of Chase National Bank and Comptroller of U. S. Currency without learning much about money. But Mrs. A. Barton Hepburn is said to have tripled her husband's estate since his death, eight years ago. She was recently elected a director of Industrial Banking Corp. of America, whose purpose, likely to be profitable as well as philanthropic, is to advance small loans at reasonable interest rates to economically unimportant persons on the collateral of their earning power and character.

Underwood

International

Plans for three private houses on Manhattan Island have been filed so far this year. A home for Herbert N. Straus (left), vice president and treasurer of R. H. Macy & Co., president of L. Bamberger & Co., Newark, and strong Hoover supporter, will be the most pretentious of the three. Located at 9 East Seventy-first Street, a few doors from Fifth Avenue, it will cost $400,000 on land assessed at $225,000. Henry Rogers Winthrop (right) will build a house at 120 East Seventy-eighth Street for his daughter, Mrs. Robert G. Payne. It will cost $100,000. Mr. Winthrop is director of the Chase National Bank, vice president of the Metropolitan Opera Co. and of the English-Speaking Union, director of the Wabash and Long Island railroads. The third home-builder is Stuart S. Unz of Unz & Co., manufacturing printers specializing in color work. The firm of Unz does many ships' plans, posters, booklets for steamship companies; the house of Unz will be located on the corner of Riverside Drive and Eighty-second Street.

International

the Month

Keystone

International

A report, too persistent to be discredited, links the International Mercantile Marine and the Roosevelt Steamship Company in a merger. President of the Roosevelt line is Kermit Roosevelt (above). P. A. S. Franklin (left), president of I. M. M., it is said, will be president of the joined lines.

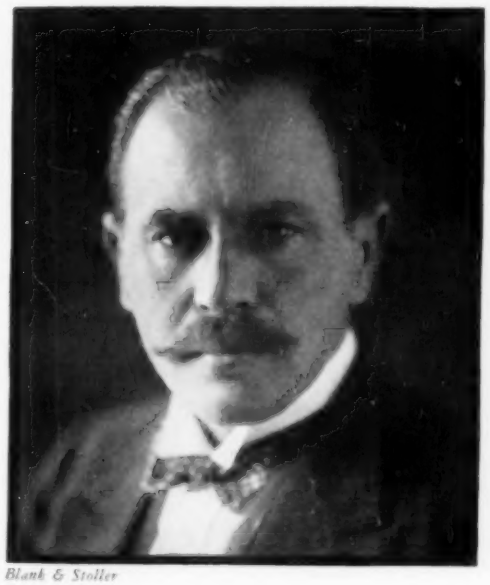
Keystone

Jules Hauvette Michelin heads the U. S. subsidiary of Andre Michelin et Cie., largest European tiremakers. His employees at Milltown, New Jersey, forced out of work by the closing of the plant four months ago, are credited in the Michelin books with $700,000 from a cumulative yearly bonus. By thus giving credit to his employees, Mr. Michelin broke a rule of his company which provides that no bonus shall be paid until the employee has been off the pay roll three years. Typically French, the purpose of the rule is to insure and reward a three-year loyalty of former employees, to dissuade them from giving away secret Michelin processes, securing Michelin customers

Keystone

The climax of the Soviet-U. S. trade controversy, attended by much Soviet-baiting, was reached when Assistant Secretary of the Treasury Seymour Lowman forbade entry into the U. S. to six ships laden with Russian wood pulp on the grounds that the pulp was produced by convict labor. Among many words on the subject, those which carried most weight came from Paul D. Cravath, world-famed corporation lawyer. Mr. Cravath urged an immediate economic discussion between Russia and the U. S., drew a parallel between Mexico and Russia, suggested that a man of the type of Mr. Dwight Morrow should be dispatched to Russia.

When the late grim John Gottlieb Wendel died more than a decade ago he left real estate holdings on Manhattan Island worth something more than $100,000,000. To his inheriting sisters, whom during his lifetime he mercilessly dominated, he left a tradition that was a command: "Buy, but never sell." The Wendel holdings were Manhattan's largest. Little more than a month ago Mrs. Rebecca Wendel Swope, next to last of John's six sisters and the only one to defy his command never to marry, died. Her will also broke a Wendel tradition, dispersed most of the holdings to various charities, stipulated that such of the holdings as went to Ella Wendel, sole surviving sister, should after Ella's death also go to charity. Methodism profited most and especially its Board of Foreign Missions, treasurer of which is Dr. Morris W. Ehnes (left) who, during the board's last fiscal year, supervised the disbursement of $2,622,484.41, and is extremely energetic in securing gifts. *If* the Wendel estate is worth $100,000,000, then Nanking (China) Theological Seminary will get the colossal sum of $17,500,000, by far the greatest gift ever made to a missionary enterprise.



Blank & Stoller

P. & A.

John Barry Ryan Jr., (above, with his wife, the daughter of Otto Kahn) is the grandson of Thomas Fortune Ryan. He has worked ten years as reporter in Philadelphia, London, New York, and Newark, New Jersey. In the last named city he has, this summer, begun to publish the *Free Press* to compete with the tabloid Newark *Ledger*. To date, the *Free Press* circulation is 16,000, that of the *Ledger* some 56,000.

Frederick H. Bedford Jr., director of Standard Oil Co. of New Jersey and son of the late F. H. Bedford, longtime S. O. N. J. vice president, announced that his and affiliated oil companies would sell automobile tires from their service stations (see page 102). The inspiration to do so, he said, came from the mail order houses.

Underwood & Underwood

ALBERT H. WIGGIN, *born February 21, 1868, at Medfield, Massachusetts; now of New York and Greenwich, Connecticut*

P. & A.

MRS. ELEANOR MEDILL PATTERSON, *born in Chicago, Illinois, now of Washington, D. C.*

Underwood & Underwood

GEORGE HENRY DORAN, *born December 19, 1869, in Toronto, now of New York and London*

Underwood & Underwood

HARRY FORD SINCLAIR, *born in Wheeling, W. Va., July 6, 1876, now of New York and Great Neck, L. I.*

Underwood & Underwood

RICHARD BEDFORD BENNETT, *born July 3, 1870, at Hopewell, New Brunswick, Canada, now of Calgary, Alberta*

Underwood & Underwood

W. CAMERON FORBES, *born in 1870 in Milton, Massachusetts, now of Norwood and Naushon Island, Massachusetts, and Tokyo, Japan*

Keystone

DOUGLAS MACARTHUR, *born January 26, 1880, in Little Rock, Arkansas, now of Washington, D. C.*

¶ Descendant of a well-known family of soldiers, Douglas MacArthur, brother of the late Captain Arthur MacArthur, was until one day last month the youngest major general in the entire U. S. Army. Last month he was appointed by President Hoover to the highest position possible in the Army, Chief of Staff, with the rank of general to succeed retiring General Summerall. He is the youngest man ever appointed to the office, and his only two superiors will be the President and the Secretary of War. In 1903 when he was graduated from West Point he was first honor man.

Career Milestones

¶ Important milestones in a career that has recently been thickly dotted with milestones was Albert Henry Wiggin's assumption of a directorship in Harris, Forbes Corp. With Mr. Wiggin as head of Chase National Bank and with Chase National Bank as world's largest bank, everyone is familiar. With Mr. Wiggin as poker-liking banker with many friends and as Unshaken Pillar during the 1929 market break, FORTUNE readers are familiar [FORTUNE, June, 1930]. There remains the significance of Mr. Wiggin's new position, a position resulting from the purchase by Chase of Harris, Forbes. This significance may be summed up by stating that whereas Chase Securities Corp., Chase National's investment affiliate, has been a large influence in utility financing, and Harris, Forbes has been a very large influence in utility financing, the two together should be able to handle utility financing on a basis adequate even for the tremendous light and power expansion and consolidation looked for in the future.

¶ She is supposed to have the most beautiful voice in Washington. She wears Vionnet gowns. She has written two novels. She married the Count Gizycka and had one daughter, Felicia, who now calls herself the Countess Gizycka. Her second husband was Mr. Elmer Schlesinger, who died last year of heart failure. At the request of her mother, she has taken back her maiden name and calls herself Mrs. Eleanor Medill Patterson. She is the sister of Joseph Medill Patterson, publisher of the Chicago *Tribune*, the New York *Daily News*, and *Liberty*. She has made several attempts to buy or lease the Washington *Herald* from Mr. Hearst. Her efforts have always failed, but Mrs. Patterson at last secured an editorial position. She is now editor-in-chief of the newspaper she was unable to buy. Her first act as such was to ridicule reports that Mrs. Alice Longworth would campaign for Mrs. Ruth Hanna McCormick.

¶ Few figures are as well known in publishing circles as that of the debonair George Henry Doran. Last month came the surprising news that he had deserted his own Doubleday, Doran & Co. to assist Hearst book and magazine publishing.

¶ A milestone in anybody's career would be the building of a billion dollar corporation. And it has been frequently reported that Mr. Harry Ford Sinclair wants to do just that, although he has never publicly committed himself to the desire and his friends say they have never heard him mention it. At any rate, a step in that direction was taken when Sinclair Consolidated Oil Corp. (in one of the largest cash transactions in history) sold its half interest in Sinclair Pipe Line Co. and Sinclair Crude Oil Purchasing Co. to Standard Oil Co. of Indiana, which already owned the other half. The price was $72,500,000. By the deal, Mr. Sinclair is supposed to have paved the way for purchase of Prairie Oil and Gas Co. and Prairie Pipe Line Co. In this way Mr. Sinclair would approach a huge and very rich unity in the West and Midwest. But no matter what he intends, by his unprecedented cash transaction Mr. Sinclair, who once failed miserably as a cautious pharmacist, has again written his heavy signature in the books of oil.

¶ For nine years (with only one slight interruption) no Prime Minister of Canada has been a Conservative. This served to make more startling the recent overwhelming Liberal defeat by the Conservative Party ably and vociferously led by the portly, genial Mr. Richard Bennett, once counsel for the C. P. R. and ten times a millionaire. The issue was tariff. Mr. King held for a "countervailing" tariff which would approximately duplicate on all items the duties imposed by the U. S. Hawley-Smoot bill. Mr. Bennett, the victor, wanted an even higher tariff and was also unwilling to grant "Imperial Preference" to his mother country. While Canadian friends congratulated Mr. Bennett on his signal victory, the New York *Times* mournfully estimated that the victory would cost the U. S. a $500,000,000 loss in trade.

¶ The grandfathers of W. Cameron Forbes were Ralph Waldo Emerson and John Murray Forbes, China merchant and financier, of whom Emerson remarked: "It is, of course, that he should shoot well, ride well, sail well, administer railroads well, carve well, keep house well, but he was the best talker also of the company." Similarly versatile and westward-turning, "Cam" Forbes climaxes this movement this summer as he takes his post as the new U. S. Ambassador to Japan. A convivial but strictly temperate bachelor, he has heretofore diverted himself with polo, of which he is both a player and New England's greatest patron. He has busied himself with being senior partner of his grandfather's Boston mercantile house, Governor-General of the Philippines, head of President Hoover's Haitian commission. As a director of A. T. & T., his picture also appears on page 92.

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A. B. HANCOCK, 1ST VICE-PRESIDENT
L. J. ELLIOTT, 2ND VICE PRESIDENT
H. A. BASCOM, TREASURER
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To Aid and Encourage the Breeding
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Saddle Horse

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Arab

Welsh

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Suffolk

Shire

Percheron

Standard Bred

Morgan

Shetland

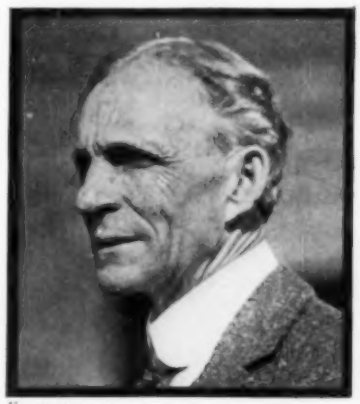
Mule

Farm Problem: One Angle

HENRY FORD stated on his sixty-seventh birthday (July 30) that there was no such thing as overproduction. He said that new uses should be discovered for wheat.

Taking sharp issue with Mr. Ford is the Thoroughbred Horse Association of America. In 1928 Mr. Dinsmore, secretary of the Association, bet that wheat would go to seventy-five cents a bushel before 1933. The bet, says Mr. Dinsmore, is still good. And why? Because of the automobile. Tractors have replaced millions of horses and mules in farm work. A horse or a mule consumes annually the product of two and one-half acres of land. When a farmer buys a tractor and displaces two work animals, he is five acres ahead. He plants corn or wheat on the five acres. Half a million farmers with half a million tractors have 2,500,000 extra acres. So they all plant surplus foodstuffs and the world has too much corn and wheat, and grain prices collapse.

Fantastic? But consider horse and mule statistics. There are 6,327,000 *fewer* horses and 110, 000 *fewer* mules on U. S. farms today than in 1920. The acreage required to maintain them is 16,092,500 acres. There are 600,000 *fewer* horses and mules in U. S. cities than there were in 1920. Acreage for them is 2,400,000 acres. Therefore the replacement of animal power with motor power has freed 18,492,500 acres. And most of these acres are producing corn, wheat, and rye in an overproduced world. "We have danced to the motor's tune; now we must pay the fiddler," says the Horse Association. And the farmer, it adds, pays most of all.


Keystone

The argument that grain overproduction results solely or primarily from the dwindling of horses and mules can hardly be granted as readily as the horse people assume it. But that there *has* been an increase in grain acreage; that the world *has* more grain than it needs; and that, despite Mr. Ford, there *is* an overproduction in agriculture, can hardly be denied. While the Federal Farm Board was holding 69,000,000 bushels of wheat off the market, and its chairman, Alexander Legge, was urging farmers to reduce wheat acreage, wheat (September option) sold in Chicago at 85⅝ compared to 147½ only twelve months previously. It was at its lowest price since 1914. World's visible supply of wheat (i. e., wheat actually stored in granaries) stood at 155,194,000 bushels, an increase of nearly 30,000,000 bushels in two weeks. Meanwhile dispatches from Montreal announced that the new Welland Canal would be opened on Labor Day, greatly expediting the movement of grain from the Great Lakes into the St. Lawrence, and dispatches from France announced that wheat there behind tariff walls was selling at $1.71 a bushel.

So low is wheat in the U. S., with a surplus of 200,000,000 bushels, that a large amount is being fed to cattle and hogs and horses instead of corn. The weather intervened (and more effectively than Mr. Legge's exhortations) to reduce the corn surplus. This summer's drought came too late to destroy much wheat.

Note: This article is printed on a reproduction (except for Henry Ford's picture) of the stationery of the Thoroughbred Horse Association of America.

P. & A.

The Forty Ranking Cities

THE desire to be biggest is probably a fundamental human motive. It is doubtful whether in some Neolithic Age a child did not boast, "My father can lick yours," and whether, when the father had moved into a village, he did not explain with pride to his wife that their village was larger than the one over the hill and by the fork in the river. In the U. S., in this year of census 1930, is the time for such reflections. And in no city more than Los Angeles, shown above in the flare of an opening cinema night, are the reflections happier. For Los Angeles, once tenth city, has miraculously leaped to fifth city, and its population is more than doubled. Cleveland, fifth in 1920, trails the new fifth by more than 200,000, and is not in the million class. The Hollywood section contributed its fair share, but by no means all. For Los Angeles has awakened to its port facilities and railroads serve it. It dammed the Owens River for cheap power and will build miles of pipe to Boulder Dam and bring the Colorado River to Main Street.

For all its sprawling heterogeneity, (it grew like New York by annexing outlying suburbs), it is fast assuming a definitely metropolitan character. And any Angeleno will tell you that by the next census Los Angeles will have passed Detroit and probably Philadelphia.

The first ten cities of the U. S. are:

New York	6,958,792	Cleveland	901,402
Chicago	3,373,753	St. Louis	822,032
Philadelphia	1,961,458	Baltimore	801,741
Detroit	1,564,397	Boston	783,451
Los Angeles	1,231,730	Pittsburgh	669,631

Chicago, the second, finds cause to rejoice for it has passed Paris and becomes the world's fourth largest city (although Paris with its smaller area and more populous suburbs is probably ahead of Chicago as a center of metropolitan population). The five largest world cities are, therefore, New York, London, Berlin, Chicago, Paris.

The second ten of ranking U. S. cities are:

San Francisco	625,974	New Orleans	455,792
Buffalo	572,913	Cincinnati	449,331
Milwaukee	568,962	Newark	444,170
Washington	485,716	Kansas City, Mo.	392,640
Minneapolis	464,674	Indianapolis	364,073

California again has reason to rejoice. For this group in 1920 was headed by Buffalo, now twelfth. The third ten are:

Seattle	363,134	Portland, Oregon	299,122
Atlanta	347,991	Toledo	290,787
Rochester	325,019	Houston, Texas	289,428
Jersey City	316,914	Columbus, Ohio	289,056
Louisville	307,808	Denver	287,644

Of these, Houston more than doubled its 1920 population. The fourth ten are:

Oakland	284,213	San Antonio	254,562
St. Paul	270,883	Memphis	252,049
Dallas	260,397	Providence	251,029
Birmingham	257,657	Omaha	214,175
Akron	256,353	Syracuse	209,277

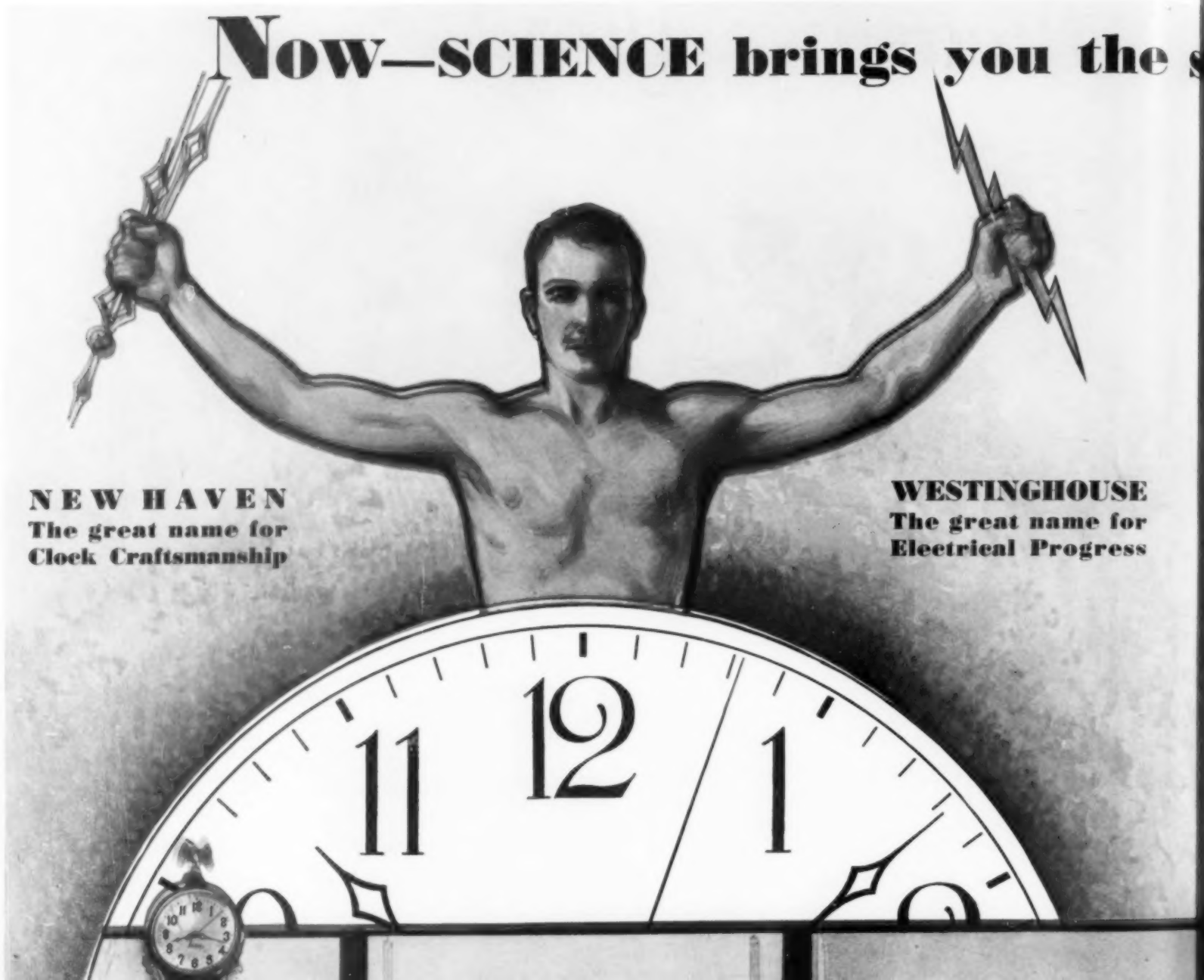
The population of the entire U. S. is approximately 122,728,837.

Pleasure Ahoy!

CAMELS are companions for any occasion . . . mild, mellow, gloriously fragrant . . . enjoyable as the sparkle of sun and spray . . . a smoke that's *all* pleasure!

Camels

© 1930, R. J. Reynolds Tobacco Company, Winston-Salem, N. C.


NOW—SCIENCE brings you the
NEW HAVEN
The great name for
Clock Craftsmanship
WESTINGHOUSE
The great name for
Electrical Progress
11
12
1

upreme Electric Clocks

The New Haven Clock Company in exclusive collaboration with Westinghouse Electric & Mfg. Co.

presents this superb line of Electric Clocks, including a remarkable electric alarm clock at only $7.95, colorful kitchen clocks, dependable timepieces, and other models with melodious strike and full Westminster chimes.

MODERN homes, ever proud to *remain* modern, welcome this latest scientific achievement for the home. This is the new series of New Haven-Westinghouse Electric Clocks, created through the collaboration of two great old American companies—the New Haven Clock Company, famed for fine clockmaking for five generations, and Westinghouse Electric & Mfg. Co., the great pioneer in electrical progress.

Now you will want an electric clock in your home since you can have one of *these!* No more need you be bothered with springs to wind or old-fashioned escapements to adjust. You merely plug the clock into your regulated alternating current outlet, and then year after year the wonderfully simple electric mechanism gives you time-accuracy that ordinary clocks could never equal. This is because it has the marvelous self-starting sub-synchronous motor, turning at the remarkably low speed of only 200 revolutions per minute, producing so little friction as to ensure long life and quiet, trouble-free operation.

As a clockmaking event of prime importance, the New Haven Clock Company presents the Electric Artlarm—the alarm clock for this modern age, priced at only $7.95. You do not have to wind it; just set it for the time you wish to arise, and a most musical tone bids you greet the morning. So beautiful is this Electric Artlarm in design and color that it will grace the most tasteful living room as well.

Perhaps most wonderful of all are the electric chime and strike clocks, sounding the pure, silvery tones for which New Haven Clocks have long been noted. The chimes are self-adjusting; in setting or resetting the clock, you can be sure the chimes will be "in time".

Any one of these electric models is a clock by whose master timekeeping you can confidently set the finest watch or any other clock in the home. See these scientific clocks at your nearest New Haven-Westinghouse Authorized Dealer's. Beautiful as they are, these clocks are moderately priced.

THE NEW HAVEN CLOCK COMPANY

New Haven, Conn., *makers of fine clocks for more than five generations.*

$7.95

ELECTRIC ARTLARM

THIS is a notable achievement in clockmaking. Its beauty lifts it out of the class of old-style "alarm clocks". While, as a welcome morning waker, this electric Artlarm is dutiful in the bedroom, it is beautiful in any room—a tasteful decoration for any place in the home. But above all it is a real electric alarm clock that you never need to wind. You merely set the alarm, and a musically toned concealed bell pleasantly wakes you for the new day. The moulded case is of an attractive mahogany shade. The numerals against the pleasing dial are easily legible. The large-sweep second hand, making its steady, unobtrusive circles, assures you that this quiet clock is unfailingly telling time, without the daily bother of your winding it. Height, 5¾ inches; width at base, 4¾ inches. With regular dial, $7.95. With radium dial, $9.45.

★IMPORTANT.—All New Haven-Westinghouse Electric Clocks (except the Electric Artlarm) have a new invention that makes for unprecedented timekeeping dependability: this is the *Automatic Control,* a simple, remarkable device that minimizes time-error from current interruptions.

These clocks are regularly furnished for 60-cycle, 110-120-volt alternating current.

Copr. 1930 N. H. C. Co.

ANNAPOLIS electric banjo clock, with hour and half-hour strike and full Westminster chimes. Solid mahogany, antique finish. Panels of lovely, subtle coloring. 5½-inch dial: raised numerals; sweep second hand. Equipped with *Automatic Control* ★. Height, 27 inches $55
With hour and half-hour strike, without chimes . $45

CLOISTER upright electric clock of rich Gothic design, with hour and half-hour strike and full Westminster chimes of the famed New Haven beauty of tone. The aristocratic case is of antique-finished solid mahogany with raised panels. 6-inch dial has raised numerals and large-sweep second hand. Heavy cast sash and beveled convex crystal. Equipped with *Automatic Control* ★. Height, 14½ inches; width, 10 inches $75

REVERIE tambour electric clock is an unusually artistic model, with hour and half-hour strike and full Westminster chimes, whose light and silvery notes sound like elfin music. It has a graceful, antique mahogany-finished case with contrasting dark panels and base. The 5½-inch dial has raised numerals. Convex crystal, large-sweep second hand and *Automatic Control* ★ are other desired features. Width, 19 inches; height, 9 inches

PORTIA in a choice mitting h kitchens. cream-col Width, 8

NEW HAVEN-WESTINGHOUSE

46 Percent of Total

FORTY-SIX PERCENT of the advertising appropriation of the Coca-Cola Company goes into outdoor advertising, according to the recent statement of an executive of that corporation. The Coca-Cola Company knows how outdoor advertising conscious is the American public, says this executive, and so the company concentrates where results are assured.

¶ When a national advertiser such as Coca-Cola spends 46% of its appropriation for outdoor advertising as compared with 24% for dealer helps, 15% for publication, 10% for radio and 5% for miscellaneous, the pulling power of outdoor advertising must be a certainty.

¶ Color; action; size; flash; constant repetition; all these contribute to deliver the sales message. More and more companies are turning to outdoor advertising today for results.

THE CENTRAL OUTDOOR ADVERTISING COMPANY

1028 CARNEGIE AVENUE
CLEVELAND

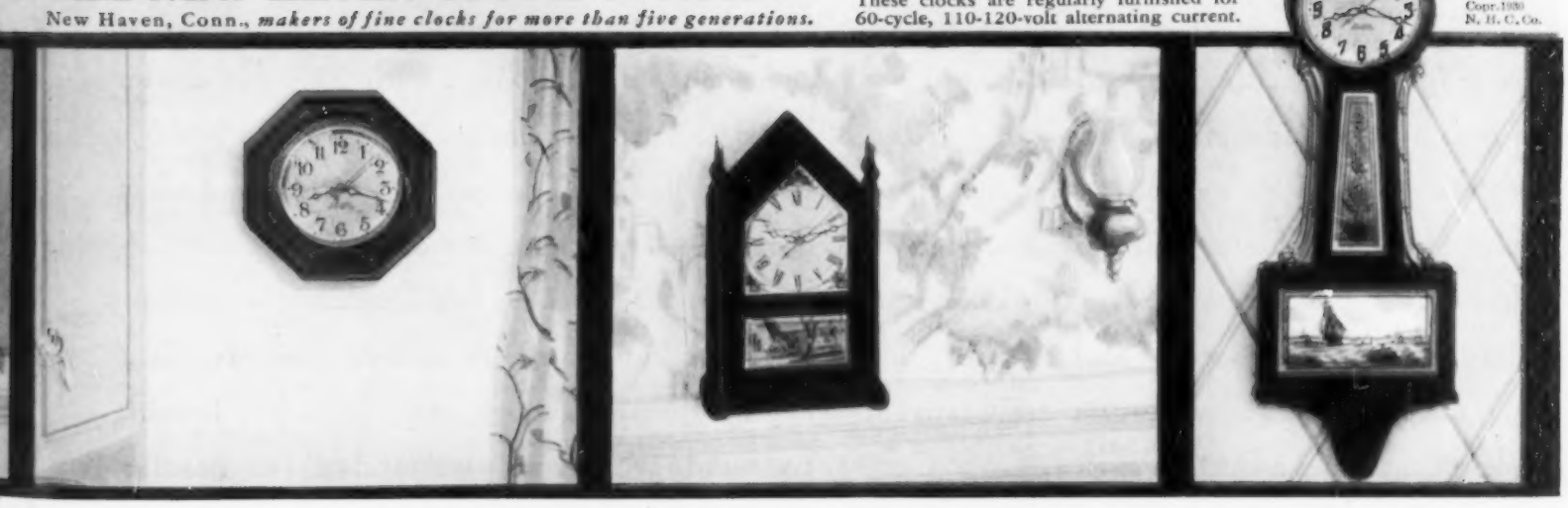
Central

320 VANCE STREET
TOLEDO

New Haven, Conn., *makers of fine clocks for more than five generations.*

These clocks are regularly furnished for 60-cycle, 110-120-volt alternating current.

Copr. 1930 N. H. C. Co.



PORTIA electric kitchen clock of attractive octagon design. It may be had in a choice of five pastel shades—green, rose, blue, yellow and white, permitting harmony with the charming color schemes of today's attractive kitchens. This clock has a cadmium-plated sash, convex crystal, 5¼-inch cream-colored dial, *Automatic Control* ★ and jump second hand. $9.95 Width, 8⅛ inches. This clock is an extraordinary value . . .

VALLEY FORGE colonial electric clock with hour and half-hour strike. This delightful model has a rich mahogany-finished case, 5½-inch cream-colored dial, Roman numerals and large-sweep second hand. The mellow coloring of the quaint picture and the style of the case are a true reflection of early American clock design. Possesses the remarkable *Automatic Control* ★. Height, 14 inches; width, 9 inches $25

PLYMOUTH electric banjo clock, with hour and half-hour strike. Mahogany-finished case, decorative panels, attractive top and side ornaments. 6¼-inch dial; raised numerals; large-sweep second hand. Convex dial. Height, 30 inches. With *Automatic Control* ★. . . $35

SE ELECTRIC CLOCKS

MICHIGAN

GRAND RAPIDS

Style Center of Furniture

WITH a background of style leadership that year by year becomes more firmly entrenched, Grand Rapids, as a producing center of the bulk of the nation's finest furniture, offers distinct and unusual advantages for manufacturers of wood products and furnishings for the home. . . Here is located America's largest colony of premier stylists and designers; here live loyal workmen of Nordic extraction born to the tradition of sound craftsmanship; here is found a score of plants serving this extensive industry. Panic free, boom free, home owned, healthy, industrially and economically sound, Grand Rapids, with its 200,000 population, is at once a good place in which to live — to work and to play.

If your product is for the home, it can be made profitably in Grand Rapids where circumstance and environment combine for your benefit.

This Bank will help you find greater success!

For 77 years the Old Kent Bank has helped guide the industrial progress of Western Michigan and the civic growth of its city. Among its customers are many manufactories which are the largest of their kind in the world. Our specialized knowledge is offered freely to those contemplating Grand Rapids as a production unit.

OLD KENT BANK

GRAND RAPIDS

West Michigan's Largest

Crude Rubber

(Continued from page 84)

the cheapest in the world—far cheaper than any imaginable machine; the conversion of latex into rubber has already had the benefit of high-powered research; and nothing is relatively cheaper than ocean transportation. So it would indeed be a defiance of common sense as well as logic to continue to produce rubber if the world is not prepared to pay thirteen cents for it.

One curious aspect must not, however, be overlooked. Natives own about half the rubber acreage. And of that, about half is in very small lots—a few acres which a man and his wife and ten children can, after a fashion, take care of. The ways of this little fellow are not our ways. The cheaper rubber is, the more he will produce. He may have a potential production of ten pounds a day. If the Chinese merchant will give him ten cents a pound, he will quit for the day when he has five pounds, for fifty cents is all he needs. But if the Chinese will give him only two cents, then he must get out his entire ten pounds. The true low cost of production, therefore, is the point at which a native will collect latex instead of reverting to savagery. And that can hardly be expressed in terms of U. S. cents or British pennies.

Leaving aside these quaint orientalisms, we may conclude that rubber is worth thirteen cents a pound, since that is the cost of its transference from tree to Akron. And a Marxian world might so figure it. But rubber was, after all, planted by Capital, and Capital still feels entitled to a return. The figures happen to work out so that for every one cent above cost of production, Capital gets a little less than 1 per cent return. Thus, if rubber sells for twenty-five cents and costs thirteen cents to produce, the plantation gets approximately 10 per cent on its investment. Thus, from the point of view of Capital, rubber is worth at least 25 cents. But what rubber is worth to Labor or to Capital is one thing, and what it will bring is quite another.

The prosperity of American rubber manufacturers depends not primarily upon the price of rubber, but upon the range of price. If during the next five years, the price of rubber should vary only between fifteen and twenty-five cents, the greatest obstacle to steady prosperity in the American rubber industry would be removed. And, except for brief and insignificant interludes, there are good reasons for believing that such may be the case. The high point of the bracket is obviously more important than the low. Since no commodity ever sold for 00 cents a pound, it is of course the high point that determines the maximum possible range. And in this case it is harder to see how rubber can go beyond twenty-five cents than to see how it can sell, as it does, 30 per cent or 40 per cent below cost of production. Every effort will, of course, be made, first of all to put rubber to twenty-five and then higher. Every scheme to outwit Supply & Demand is even now being discussed in London and Amsterdam. Especially in Amsterdam. The proverbially jovial Dutchman has turned sour. For the first time since the War he is tasting bad times, and he hates it. Things are not so good in Holland; in the Dutch possessions things are terrible. Tea, coffee, rubber, sugar—everything is down, and trade between Holland and her colonies is sick. So the Dutchmen are begging the British to have another restriction scheme. Between them they do actually control the world's rubber, and if they want to charge forty cents a pound for it, they theoretically ought to be able to manage such a manipulation. But the British are not elated by the prospects. They have been burnt once with restriction. Furthermore, rubber is not as large a *percentage* of the British Empire as it is of the Dutch. Presumably the British think it is up to the Dutch to do some restricting on their own account.

Another restriction attempt may come. But it is hardly likely to be greeted with much alarm in New York or Akron. Great solid facts are all against any "corner" on rubber. There is, first of all, almost no chance that the world's use of rubber will increase with anything like the speed of the immediate past. The original equipment of America with automobiles has, broadly speaking, taken place. And China is not yet ready. There is again the fact of

Business Sagacity

Good common sense is just another mark of *understanding*. It is not rare in business. Only is it *un*common when it is so good that it is prophetic. But then it drops its maiden name and business knows it as Sagacity. Its ready, far-reaching, accurate inference from observed facts and figures, is a dependable power. It visions the human motives in conduct, and foresees results. With Integrity it is the most valuable of all human qualities in business.

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Crude Rubber

[*Continued from page 141*]

reclaimed rubber. Even now one part of reclaimed is being used for every two parts of new crude. The higher crude rubber prices go, the greater will be the use of reclaimed. Again, tire manufacturers have probably passed forever out of the hectic years of youth. The spectacle of Americans bidding against each other feverishly and for insufficient reasons is unlikely to be repeated. Finally, there is above all the fact of Nature. The only way to cancel the fact of 7,000,000 acres which are about to produce 250,000 *tons* more than we can use is to deliver the trees to jungle. And even that is not permanent cancellation, for at the slightest provocation they can be rescued again from the jungle that swallowed them.

It must, of course, be borne in mind that despite its ghastly ultimate failure, the Stevenson Act *did* succeed temporarily in putting the price of rubber up—way up. Theoretically the Dutch and British could demand for their rubber almost anything they jointly asked. But in practice such schemes have almost always been disastrous to the schemer. In the case of a new rubber restriction plan, the best chance of success would seem to lie in providing for us more than a fair return on capital. If, on top of the cost of production, the planter gets 10 per cent to cover capital charges and profit, he may consider himself lucky. That would mean rubber at about twenty-five cents a pound. And if rubber never went beyond thirty cents a pound, the American manufacturer could have little complaint.

As far as the American public is concerned, it may consider its supply of crude rubber as in the nature of a gift. For if 7,000,000 acres were planted for us free of charge around Akron, we could not extract the rubber for fifty cents a pound. We shall reap the benefits of labor at the subsistence level without suffering any of the social disadvantages thereof. To be sure, the world may pay some $400,000,000 for the million tons it needs in 1935, which may not sound like free. Since, however, the world, if necessary, would pay $1,000,000,000 or even $2,000,000,000 for that million tons, we may permit ourselves the fancy that rubber is a gift of the Middle East to the world to the extent of a billion or so dollars per year—and mostly to the U. S.

Firestone's President

[*Continued from page 80*]

mechanism until recent years: tires continued for years to be made almost entirely by hand. They were primarily stout fellows who went or were propelled with unparalleled velocity from one event to another. Two of the very stoutest and most likable were Frank Seiberling (5′ 4″) and Harvey Firestone (5′ 6″). The growth of little Akron could almost be measured in terms of their honest rivalry. Frank Seiberling took the Goodyear company to the absolute heights of leadership, only to fall with a mighty thud in 1921. Which Harvey Firestone probably regretted as much as Princeton would regret the defeat of Yale by Harvard.

These stout fellows at Akron (and hundreds of less sturdy men elsewhere) had to contend against two great forces over which they had no control: the demand for their product; the supply of their rubber. When they started business neither they nor anyone else knew what a tire was supposed to be. When they got tires to go 5,000 miles, they thought they knew—only to discover that tires were destined to go ten, fifteen, twenty, thirty thousand miles. When they started business rubber was supposed to be an expensive substance; now it is technically given away, as the next section of this article will reveal. But although or because this year's tire was next year's junk, the chance for profit was enormous. It was the place for stout fellows without special knowledge, but with a heart full of energy and an extra allowance of native middle western common sense.

And, of course, only the stoutest have survived.

ment of the use of latex in liquid form *before* the rubber has been coagulated out of it. When it comes to crude rubber itself, U. S. may feel, again with great justice, that it knows more than any corporation living. It has 100,000 acres *planted* and most of it bearing in the Middle East. These plantations began way back in 1910 and, along with Standard Oil's penetration of the Far East, they constitute one of the dozen or so greatest American industrial achievements abroad (at another time FORTUNE will tell this story in detail). Of knowledge, U. S. has had no lack in scope or intensity.

Knowledge came but wisdom lingered, as many a U. S. stockholder may testify. The financial record of U. S. in the last decade is one of the most unhappy in American annals. From 1920 to 1927 it paid out $50,000,000 in dividends. Accounting is not as exact a science as the layman might think. Concerning depreciation reserves and "write-offs" there can be plenty of difference of opinion. But it would appear that if U. S. Rubber had followed the accounting ideas of its present management only some $20,000,000 would have been construed as profits during the 1920-27 period.

However that may be, it is interesting to note that during this period U. S. got back from its remarkable plantations sums equal to its entire investment therein. This whole period might best be summarized by saying that the first thing the du Ponts did when they took control was to knock off some $15,000,000 from U. S. bookkeeping assets.

For it was the du Ponts. With the vast prestige of Wilmington and General Motors, they took command of U. S. Rubber in November, 1928. They entered upon a domain noble in extent and historic in achievement, but a domain loaded with problems quite apart from the cumulative nonsense of the balance sheet. U. S. had plants scattered throughout the country. Its main tire factory at Detroit was antiquated. Whereas the three Akronites made an average of 15 cents *gross* profit out of every $1.00 sale (before depreciation, inventory loss, etc.), U. S. started off with a gross profit of only six cents. Fortunately, the du Ponts have been rich in the scarcest of all necessities: men. While figures never show such things immediately, the du Ponts were at once able to tip the balance to the side of hope by putting at the top of the asset column the aforementioned Francis B. Davis Jr., who knew practically nothing about rubber. Today, with a disarming modesty, Mr. Davis will say: "I can tell you the elementary facts about this business because I'm in the most elementary class there is." The du Ponts knew Davis from the ground up. When Tew, the Harvard mining engineer, was caught short in Colorado, Davis graduated, a civil engineer, from Yale Sheff. In 1909, the du Ponts hired him as resident engineer of a plant building job. Thence he was put in black powder under Lammot du Pont, after which came sporting powder, the world's greatest guncotton plant at Hopewell, Virginia, the War and smokeless powder, then a sales job to get rid of War-time surpluses, then cellulose, then General Motors, then pyroxylin (Mr. Davis becoming president of the Celastic Corporation which included du Pont's pyralin department), and finally the presidency of the du Pont Viscoloid Company, which developed safety glass (Duplate) and acquired Societe Italiana della Celluloide and Societa Anonima Mazzucchelli.

Of all rubber companies, the future of U. S. holds most interest. Despite its lack of profits it has for years maintained its gross business at nearly $200,000,000, indicating high favor both with dealer and public. From such a volume a profit "ought" to be extractable. While Goodyear seeks its goal of unrivaled leadership in rubber transportation, while Goodrich seeks the stable income to be derived from perfect balance of activities, while Firestone raises the issue of retail distribution, we may watch U. S. to see what difference sheer management can make. For when U. S. preferred sells for $100 a share (it is now $40), when dividends are regularly paid on the common, these devoutly-wished-for events will be final touches in a masterpiece of that art upon which America most prides itself—the art of management.

Keystone

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By Burton Holmes from Ewing Galloway

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C. P. R.

[*Continued from page 47*]

thousand feet of lumber all find their way back to reflect themselves in the value of the common stock. Although C. P. R. has valuable properties in its unsold farm acreage, its coal mines and its gas fields, and in its Consolidated Smelting & Refining Company, C. P. R. is primarily a carrier and its investments in ventures other than steamships and railroads have arisen from the necessity of creating traffic. The potential value of this system is not so much to be found in a revelation of the possible liquidating value of the separate properties as in a visualization of the C. P. R. as the prime mover of raw materials from one of the world's great untapped reservoirs to the great manufacturing and consuming markets of the U. S. and Europe.

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While American railroads can look forward to a continuation of slow increase in gross and to a continuation in internal growth through still greater efficiency, C. P. R. can look forward to the eventual development of Canadian raw materials and to a greatly augmented exploitation of its natural resources. This development will be fostered as in the past by C. P. R. and as in the past it will share generously in the rewards.

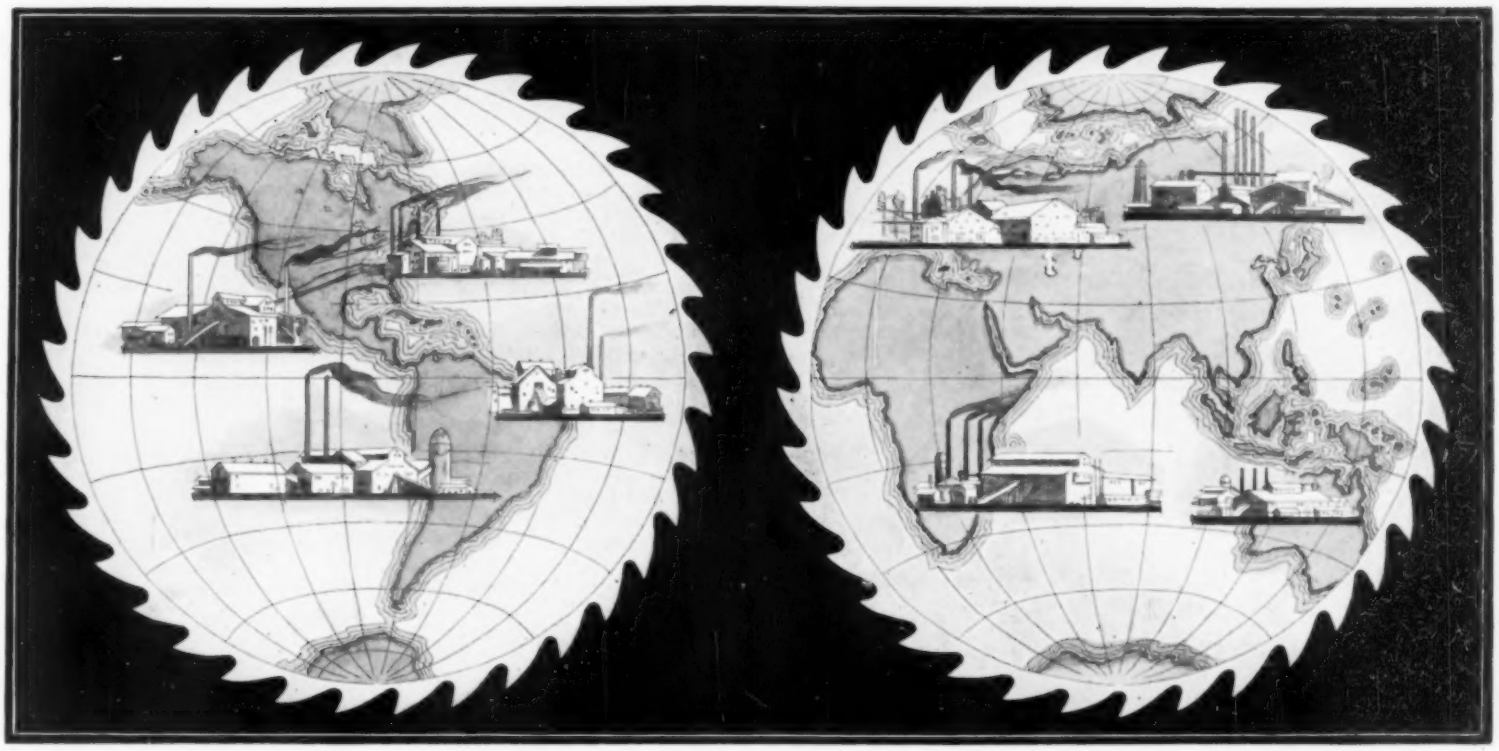
Appendix

Note on Stevenson Act

THE Stevenson Act was a law enacted by the appropriate legislative bodies of the British Empire in November, 1922, and dealt with the exportation of crude rubber from the British possessions in the Middle East; namely, the Malay Peninsula, Sarawak, on the island of Borneo, and Ceylon.

Between 1910 and 1920, 2,868,000 acres of rubber trees had been planted in this territory, and from it was produced 67 per cent of the 1920 world production of crude rubber. The productive capacity was far beyond consumption, and the British Government with extreme reluctance became party to an act to restrict production in this territory and to stabilize prices at the cost of production plus a fair return on capital.

Although designed to limit production, the Act did this through the limitation of exports from the ports of the territories by delivering to each plantation owner coupons representing the privilege of free export of a certain quantity of rubber, this quantity to be a certain percentage of 1920 potential production of his plantation, with some allowance for special cases of underproduction during that year. Exports above the coupons were at prohibitive rates of duty.



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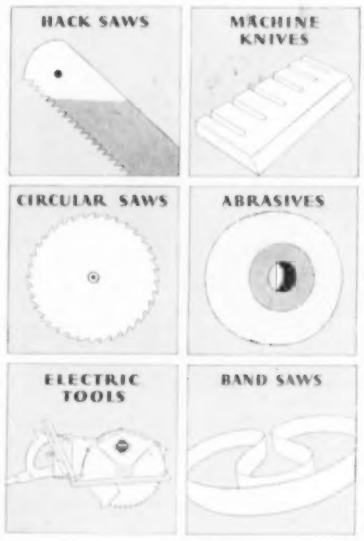

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The cost of production was fixed at ten pence or about nineteen cents, and it was determined to let production increase or decrease as the price went above or below a range of twenty-three to twenty-nine cents.

Increases or decreases in allowable exports were to be made at the end of each quarter, in accordance with the price of rubber in London at the end of the quarter. If the price were below twenty-three cents, the production would be reduced by 5 per cent of the 1920 standard of 100 per cent. If the price were above twenty-nine cents, the production would be increased by 5 per cent, and if above thirty-six cents by 10 per cent.

The figures on costs and pivotal prices given here are in terms of the 1922 value of the pound. As the British increased the value of the pound the prices in cents increased proportionately so that the pivotal prices became in time, in common parlance, twenty-four cents and thirty cents.

When the Act went into effect in November, 1922, the price was showing a rising tendency in anticipation of the effects of restriction and the statistics were as follows:

Stocks	*7½ months*
Price	*20 cents*

The percentage of production (1920—100 per cent) was fixed at 60 per cent.

By the end of the year, the price was thirty cents and the stocks down to six months. The Act was a success thus far.

In 1923 and 1924 the Act functioned in a very reasonable manner. In response to higher prices reaching about thirty-five cents in 1923, the allowable production was increased to 65 per cent. When prices fell shortly, it was cut down again to 60 per cent. In the meantime, Dutch production was increasing by leaps and bounds and rubber consumers, bearish on the future price, allowed stocks to decline. These influences, hand-to-mouth buying and increased Dutch production, were more than the price would stand, and down went the allowed percentage to 55 per cent and three months later, in the face of an advancing market, down to 50 per cent in the latter months of 1924, the high point of restriction. Before the three months period was up, the price was thirty-five cents. If it had been thirty-six cents, a 10 per cent increase back to 60 per cent would have been ordained. As it was, 55 per cent was decreed. Meanwhile, stocks were down to the lowest point in recent history, about three and one-half months, just barely a working basis. Panic took the place of reason. It was not then a question of potential production a year hence, but whether or not U. S. motorists would have to ride on rims by Christmas time. To increase production to 100 per cent would require at least a year at the rate of 10 per cent every three months. Furthermore, plantations geared to 60 per cent production would have to recruit labor for 100 per cent production, also a matter of time. Production was running behind current consumption, and there was only one-quarter of a year's supply on hand.

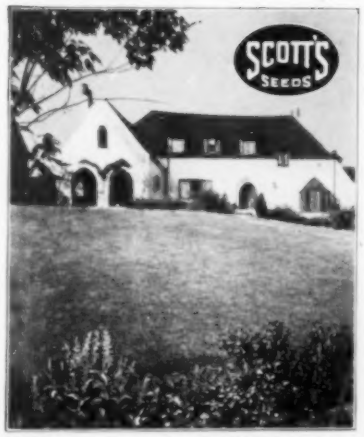
Under these conditions, rubber companies of the U. S. competed with one another to maintain a three months' supply while speculators joined in to say that they would take two weeks supply and let the rubber companies have it for a higher price.

By the time British production was 75 per cent, rubber was a dollar a pound, and it was not until rubber had retraced its steps from a dollar to eighty-five cents that 100 per cent production was allowed. The price plunged on down to forty cents by the middle of 1926 when a revised Stevenson Act made restriction again effective.

Through lobbying of crude rubber interests and through antagonism to American interests, created by domestic rubber furor of 1925, guayule plantings, Edison experiments, Firestone Liberian plans, Ford Brazilian plans, and governmental investigations, the pivotal price was advanced from a range of twenty-three to twenty-nine to a range of forty-three to forty-nine.

By stages of 20 per cent, 10 per cent, then again 10 per cent, restriction was 60 per cent again by the spring of 1927, and the prices seemed fairly stable in the thirties and forties. But again the load got too great for the restriction act to carry. Not anxious to make the same error twice, rubber companies protected themselves up to six months supply while by now Dutch and native plantings influenced by restriction of 1922 began to bear fruit. At the same time the natural increase in the production of maturing trees had given to non-British interests a much larger share of the supply.

The law terminated in the latter months of 1928 with restriction of 60 per cent and a price of eighteen cents for rubber. If a success in 1922, it was outdated by 1928. Economic forces too strong to control had come into play. While very little rubber planted during the Stevenson régime came into production before it ended, every Dutch and native tree planted after 1915, that is, every tree planted within five years of the birth of the industry, was becoming a larger and larger producer as each year passed; likewise British plantings were also maturing and although held in control were an increasing burden. The plantings of 1922 to 1927 under the influences of restriction prices will inexorably mature to aggravate the problem each successive year from now until 1935.



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Index of Advertisers
September, 1930

	Page
Aetna Life Insurance Company	97
Agfa Ansco Corporation	147
Aluminum Company of America	106
American Multigraph Sales Company	125
American Writing Paper Company	111
Austin Company, The	99
Bartlett Tree Expert Company, F. A.	11
Bayley, William	146
Bigelow, Kent, Willard & Company	142
Brooks Brothers	114
Bryant Heater & Mfg. Co.	21
Buhl Aircraft Corp.	20
Cadillac Motor Car Company	17
Californians, Inc.	3
Cameron, Viola Root	22
Canadian Pacific Railway Company	12
Carrier Engineering Corp.	1
Central Mfrs. Mutual Insurance Company	146
Central Outdoor Advertising Company	140
Clark Grave Vault Company	127
Cook Paint & Varnish Company	23
Coca Cola Company	24
Crane Company	6
Crane & Company	28
Cowan & Dengler	15
Dick Company, A. B.	9
Distributors Group, Inc.	144
Dodge Boat Works, Inc., H. E.	31
Dyer-Enzinger Company	27
Ernst & Ernst	141
Firestone Tire & Rubber Company	5
First National Bank of Boston	101
General Electric Refrigeration	105
General Tire & Rubber Company	IV Cover
Glen Springs, The	19
Globe Register Company	148
Goodyear Tire & Rubber Company	32, 33
Guardian Trust Company	16
Hartford Fire Insurance Company	118
Hercules Powder Company	II Cover
Hotel Hollenden	19
Hornblower & Weeks	144
International Mercantile Marine	120
Jackson Co., William H.	4
John Hancock Mutual Life Insurance Co.	147
Johnson & Johnson	124
Liberty Foundries Company	128
Los Angeles Chamber of Commerce	29
Lyon Metal Products, Inc.	123
Matthews Company, The	19
Meredith Publishing Company	18
Monroe Calculating Machine Company	121
National Lampworks of General Electric	7
Nelson Co., Alfred	22
Norton Company	13
New Haven Clock Company	138, 139
New York Trust Company	14
Old Kent Bank	141
Otis & Company	142
Packard Motor Car Company	34
Pinaud, Inc.	122
Pusey & Jones Corp.	115
Pyrene Mfg. Company	147
Rand Company	126
Remington-Rand Business Service	116, 117
Reynolds Tobacco Company, R. J.	137
Scott & Sons Co., O. M.	147
Scovell-Wellington & Company	22
Scripps Motor Company	19
Sirrine & Company, J. E.	30
Simonds Saw & Steel Company	145
Stedman Products Company	2
Stone & Webster Engineering Corp.	113
Stone, Webster & Blodget	26
Texas Company, The	III Cover
Thompson Company, J. Walter	109
Ullman Studios, Martin	22
Westinghouse Electric & Mfg. Co.	103
Wholey Co., William F.	25
Wood Office Furniture Associates, Inc.	10
Young & Rubicam	95

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OF BOSTON, MASSACHUSETTS

197 Clarendon St. Boston, Mass.

Please send information regarding partnership and corporation insurance.

Name.....

Address.....

Fr. .....

Over Sixty-Seven Years in Business

There are no wasteful stops » » » » with Multi-PLY non-stop typing

"Stops" in billing and order-writing cost time and money. If you still use loose forms and carbon paper for invoices, orders, bills of lading and other records, probably half or more of your operator's time is spent in waste motions - in doing by hand things which a machine can do automatically.

With loose forms, the typist must perform - in addition to typing - these six costly hand operations: (1) inserting carbon paper between forms; (2) jogging sheets in alignment; (3) inserting in typewriter; (4) straightening in machine; (5) finding writing position; and (6) separating carbon paper from typed forms.

These wasteful "stops" are eliminated with Multi-PLY "non-stop" typing. Machine operations replace expensive hand operations. Your typist's time is 100% productive - no waste motions - no lost time - no carbon handling - no getting ready or finishing up operations. Just typing—that's all.

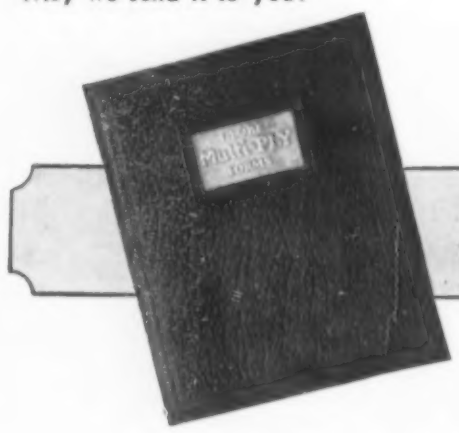
Give your typist half a chance and she'll turn out twice the work.

GLOBE Multi-PLY FORMS

Multi-Ply Forms not only save time and money by eliminating wasteful stops, but, by the combining of related forms - such as invoices, orders, bills of lading and the like - in one comprehensive set written at one time, in one operation, at one place - they cut red tape, speed up plant and office operations, and increase accuracy.

The whole story of "non-stop" typing and its advantages, is told in the Portfolio of Multi-PLY Forms, thru pictures, charts and words. To business men who hate waste, we'll gladly send a copy without any obligation.

May we send it to you?



THE GLOBE REGISTER COMPANY

Division of United Autographic Register Co.

Branches in all Principal Cities

Factories: CHICAGO • CLEVELAND CINCINNATI • OAKLAND

this portfolio of Multi-PLY forms free to business executives

The Multi-PLY Portfolio - which will be sent you without any obligation whatever, along with many actual sample forms - tells the whole story of this efficient method of "non-stop" typing.

Write to the Globe Register Company, 2412 Reading Road, Cincinnati, Ohio, and ask for Portfolio "F-4".

At the left, a map showing the starting point and destinations of the test cars, and the distances covered. Below is a photograph of the campus of the University of Kansas just before Professor H. C. Allen sent the 13 test cars away with sealed crankcases on a gruelling nation-wide road test.

UNIVERSITY SCIENTISTS
FIND THIS NEW OIL LASTS LONGER

AT 8:30 on the morning of April 8th, 1930, 13 stock cars, representing practically every popular type of automobile engine, left Lawrence, Kansas. Professor H. C. Allen supervised the start. The amount of oil poured into each crankcase was weighed. The crankcases and filter pads were carefully sealed.

Faculty Members first to unlock crankcases and test oil

The cars were routed to 13 leading universities. When they reached their destinations after runs ranging from 1500 to 2400 miles, the crankcases were unsealed by designated faculty members, the oil drained off, weighed, and then subjected to comprehensive tests by such well known authorities as Professors Huff of Johns Hopkins, Graf of Oregon State College and Beisler of the University of Florida. The results of these impartial scientific tests confirmed the findings of Texaco engineers! This oil is longer-lasting—superior—crack-proof!

Dr. Lincoln T. Work says—

Dr. Lincoln T. Work, in charge of the tests, says—"These various reports on the new Texaco Motor Oil emphasize many different points, and present these outstanding characteristics:

1—A low oil consumption which averaged one quart in 790 miles.

2—Very little tendency to form carbon when fresh or when used.

3—Retention of viscosity even after extended use on the road."

An extra margin of safety

The long life of this new crack-proof oil assures a greater margin of safety and oil economy—a margin of safety which will carry you through where other less enduring oils would crack and break down. But for maximum motoring satisfaction keep your crankcase oil at the proper level and follow manufacturer's draining recommendations.

Available in all our 48 States

The new Texaco is manufactured in five grades: C, D, E, F and G, corresponding to the Society of Automotive Engineers' viscosity ratings, to give every type of automobile engine the maximum in lubricating efficiency. Sold in all our 48 States at 30¢ a quart. (35¢ for Grade G.)

THE TEXAS COMPANY

Refiners of a complete line of Texaco Petroleum Products, including Gasoline, Motor Oil, Industrial Lubricants, Railroad and Marine Lubricants, Farm Lubricants, Road Asphalts and Asphalt Roofing.

TEXACO

the New

TEXACO MOTOR OIL
LONGER-LASTING. . "CRACK-PROOF"

© 1930, The Texas Company

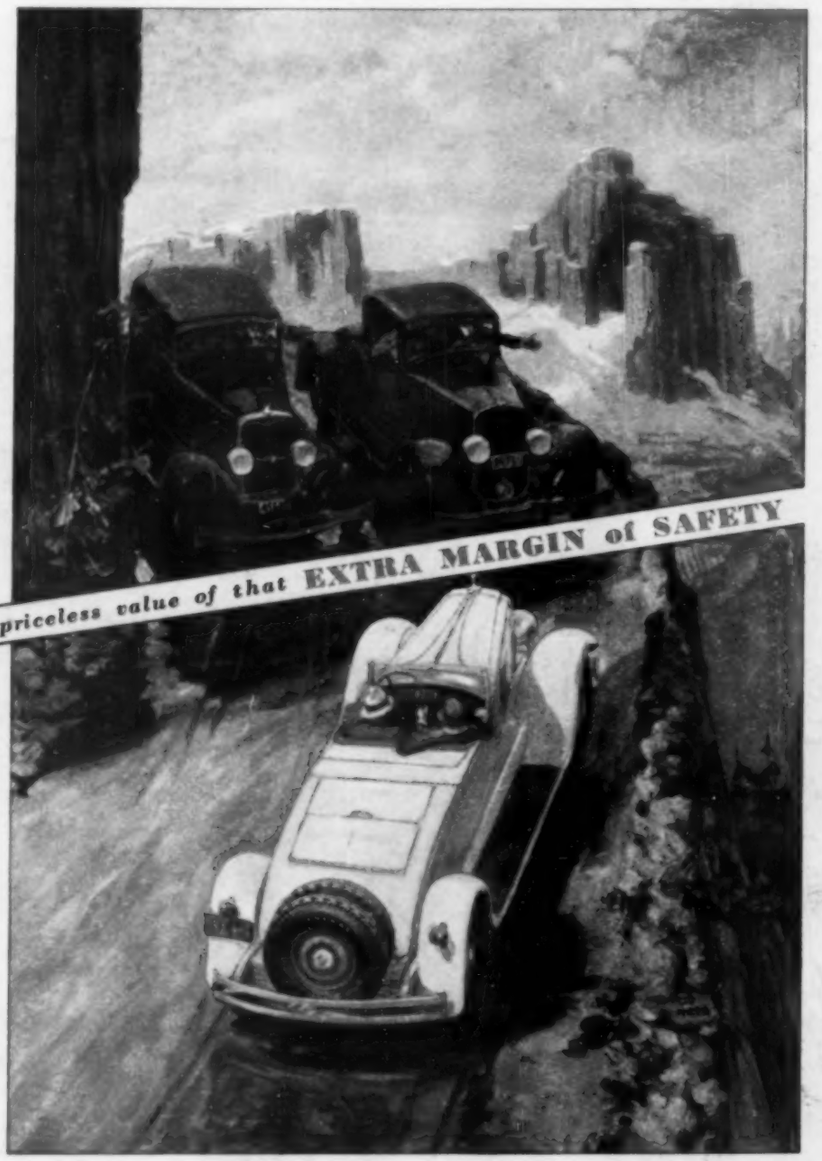
ON THE BRINK OF A HILL...

AT *any* SPEED... *a blowout is bad news*

The New General *Dual*-Balloon—the Blowout-Proof Tire means double safety in those split second emergencies when a quick, hard push on the brake throws the full strain on your tires. The new *Dual*-Balloon protects you from the many hazards of blowouts for the full average term of car ownership.

When a front tire "blows" at high speed, you're into the ditch before you can reach the brake. No time to think—less time to act—a split second from road to wreck. Even at moderate speed you're off the road or head-on into approaching cars in a flash. Then—costly damage, permanent injury. It's a cruel penalty for a tiny temporary economy! Don't risk it... No longer need any motorist face the hazard of a fatal wreck through blowout.

Only the new and patented construction of the *Dual*-Balloon eliminates the customary use of the breaker strip. The ordinary breaker strip design causes tread stiffness and sharp bending in the side wall at a single point. It creates a hinge. Whenever the air pressure becomes low, the result is internal heat and friction that causes blowouts in ordinary tires.



***Split seconds that make you realize the priceless value of that* EXTRA MARGIN of SAFETY**

Only General's patented *Dual*-Balloon construction prevents that hinge. The *Dual*-Balloon is Blowout-Proof first of all because of its all-over flexibility. It bends evenly at every point—no sharp bend at a single point. It can run at the lowest air pressure in tire history without sacrifice of tire life. And not only that—the Blowout-Proof *Dual*-Balloon is fool proof! It can run at half-pressure for days at a time without the disastrous carcass fatigue and danger of blowouts that a few miles of such treatment would invite with other tires.

See the General Tire distributor today for facts and demonstration of the tire that makes you safe. You can trust it at any speed, on any road, in any weather.

The General Tire and Rubber Company, Akron, Ohio

—goes a long way to make friends

THE BLOWOUT PROOF TIRE

The GENERAL *Dual*-BALLOON